Eureka Math™

Grade PK, Module 3

Teacher Edition

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Grade PK • Module 3

Counting to 10

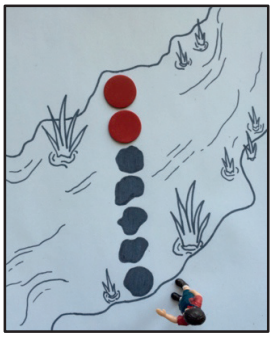
OVERVIEW

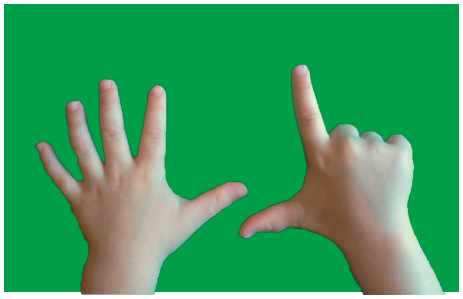
Module 3 challenges students to build on their work with numbers through 5 to make sense of and count groups of 0, 6, 7, 8, 9, and 10 objects. Students also continue their work with the number core in the following ways (**PK.CC.1–4**):

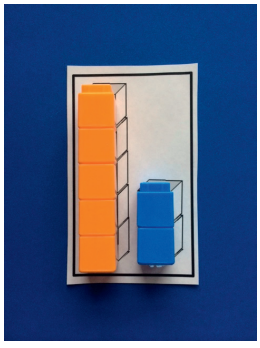
- Rote counting (the number word list up to 15)
- One-to-one correspondence (one object paired with one number word from 0 to 10)
- Cardinality (how many in a set of up to 10 objects)
- Number recognition (matching written numerals 0, 6, 7, 8, 9, and 10 to quantities)

Throughout the module, children participate in engaging experiences that help them make critical connections between these four understandings.

In Topics A and B, students count and touch 1 object at a time (one-to-one correspondence) and recognize pre-written numerals up to seven. They build on their understanding of 5 to see 6 as 5 and 1 more and 7 as 5 and 2 more. Seven can also be seen as 6 and 1 more. The relationship of both 6 and 7 to 5 is emphasized in varied ways with materials: by a color change in two-sided counters after 5, by the addition of the thumb and index fingers of the right hand when counting left to right (i.e., Counting the Math Way), and by placing the sixth and seventh objects next to the first and second objects when making vertical 5 groups (see images below). These relationships are brought out within dynamic story contexts, for example, an explorer crossing a creek and chicks hatching from eggs in their nests.







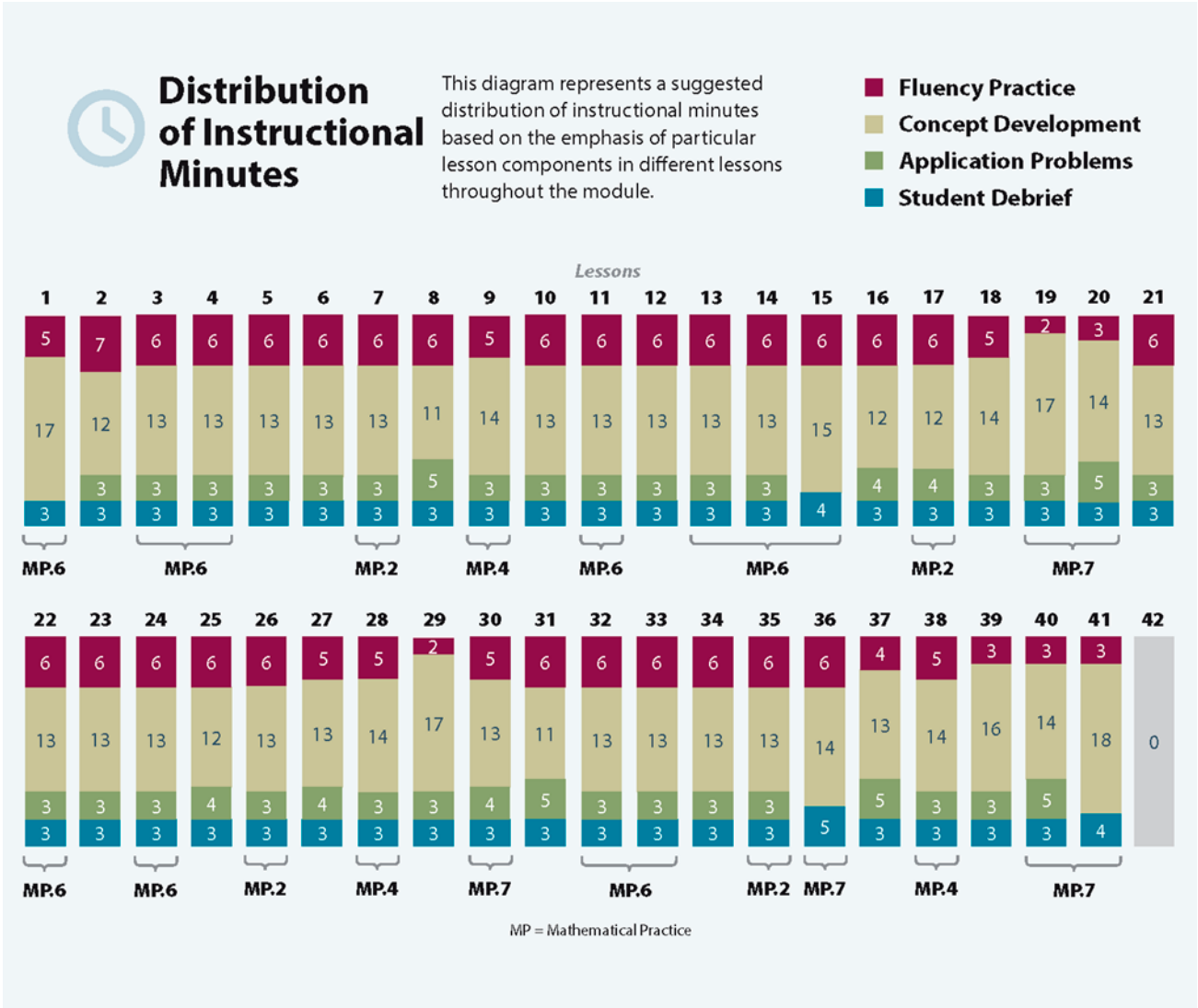
As in Module 1, students count objects arranged in varied configurations and, in Topic B, match quantities of six and seven to numerals. The pre-written numerals are not introduced until Topic B so that students have plenty of time to simply touch and count before matching the count to the abstract numeral. In this instructional sequence, students also answer *how many* questions, working through the configurations from simple to complex: linear, array, and circular (Pre-K children are not expected to count 6–10 objects in scattered configurations).

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Using the familiar sunken pirate ship template and fish, students see that the cardinality of the set does not change when the same number of objects are rearranged. Decomposing and composing numbers follows the lesson on array configurations since the array is a natural place to begin seeing decompositions. "I see a pair here and another pair" leads to "I see two smaller groups inside 6. When I put the groups back together, I have 6 again!"

The simple to complex sequence of lessons in Topics A and B, detailed above, is reiterated three more times in this module; Topics C and D focus on the number 8, Topics E and F on the numbers 0 and 9, and Topics G and H on the number 10 (**PK.CC.3abc, PK.CC.4**). More time is spent with the number 8 because it is the most challenging being 3 away from 5 and 2 away from 10. Likewise, more time is spent with the number 10 because it is foundational to place value understandings and numbers to 20.

The Module culminates with students extending the number books they began with numbers 1 to 5 in Module 1, now adding the numbers 0 and 6–10.



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Focus Grade Level Standards

Know number names and the count sequence.[1]

PK.CC.1 Count to 20.

Count to tell the number of objects.

PK.CC.3 Understand the relationship between numbers and quantities to 10; connect counting to cardinality.

a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

c. Understand that each successive number name refers to a quantity that is one larger.

PK.CC.4 Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects.

Foundational Standards

(No standards have direct application as foundational in this Module.)

Focus Standards for Mathematical Practice

MP.2 **Reason abstractly and quantitatively.** Students match sets of 0 and 6–10 objects with numerals.

MP.4 **Model with mathematics.** Students move a set of objects from linear to array and then to circular configurations.

MP.6 **Attend to precision.** Students demonstrate precision by touching one object as they say one number word. Students also count precisely the Math Way when they lift their fingers off a surface and drop each finger as they count.

MP.7 **Look for and make use of structure.** Students arrange objects in a line to expedite counting. They also use the 5-group formation to understand numbers 6–10 in relation to 5.

[1]PK.CC.2 is addressed in Module 5.

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Overview of Module Topics and Lesson Objectives

Standards	Topics and Objectives		Days
PK.CC.1 **PK.CC.3abc** **PK.CC.4**	A	***How Many* Questions with up to 7 Objects** Lesson 1: Introduce 6 and 7, and relate 6 to 5 and *1 more* and 7 to 6 and *1 more*. Lesson 2: Use linear configurations to count 6 and 7 in relation to 5. Lessons 3–4: Count to 6 and 7 left to right with fingers. Lesson 5: Count 6 objects in array configurations.	5
PK.CC.3ab **PK.CC.4**	B	**Matching One Numeral with up to 7 Objects** Lesson 6: Compose 6, and then decompose into two parts. Match to the numeral 6. Lesson 7: Compose 7, and then decompose into two parts. Match to the numeral 7. Lesson 8: Count 6 and 7 objects in circular configurations. Lesson 9: Arrange and count 6 and 7 objects in varied configurations. Lesson 10: Tally 6 and 7 objects. Lesson 11: Look at a numeral and count out a group of up to 7 objects.	6
PK.CC.1 **PK.CC.3abc** **PK.CC.4**	C	***How Many* Questions with up to 8 Objects** Lesson 12: Introduce 8, and relate 8 to 7 and *1 more*. Lesson 13: Use linear configurations to count 8 in relation to 5. Lesson 14: Count to 8 from left to right with fingers. Lesson 15: Count 8 objects in array configurations.	4
PK.CC.3ab **PK.CC.4**	D	**Matching One Numeral with up to 8 Objects** Lesson 16: Compose 8, and decompose into two parts. Match to the numeral 8. Lesson 17: Count 8 objects in circular configurations. Lesson 18: Arrange and count 8 objects in varied configurations. Lesson 19: Tally 8 objects. Lesson 20: Look at a numeral and count out a group of up to 8 objects.	5
		Mid-Module Assessment: Topics A–D (interview style assessment, 4 days)	4

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Standards	Topics and Objectives		Days
PK.CC.1 **PK.CC.3abc** **PK.CC.4**	E	***How Many* Questions with 0 up to 9 Objects** Lesson 21: Introduce zero. Lesson 22: Introduce 9, and relate 9 to 8 and *1 more*. Lesson 23: Use linear configurations to count 9 in relation to 5. Lesson 24: Count from 0 to 9 from left to right with fingers. Lesson 25: Count 9 objects in array configurations.	5
PK.CC.3ab **PK.CC.4**	F	**Matching One Numeral with 0 up to 9 Objects** Lesson 26: Compose 9, and decompose into two parts. Match numerals 0 and 9 to no objects and 9 objects. Lesson 27: Count 9 objects in circular configurations. Lesson 28: Arrange and count 9 objects in varied configurations. Lesson 29: Tally 9 objects. Lesson 30: Look at a numeral and count out a group of up to 9 objects.	5
PK.CC.1 **PK.CC.3abc** **PK.CC.4**	G	***How Many* Questions with up to 10 Objects** Lesson 31: Introduce 10, and relate 10 to 9 and *1 more*. Lesson 32: Use linear configurations to count 10 in relation to 5. Lesson 33: Count from 0 to 10 from left to right with fingers. Lesson 34: Count 10 objects in array configurations.	4
PK.CC.3ab **PK.CC.4**	H	**Matching One Numeral with up to 10 Objects** Lesson 35: Compose 10, and decompose into two parts. Match to the numeral 10. Lesson 36: Decompose numbers 6–10. Lesson 37: Arrange and count 10 objects in circular configurations. Lessons 38–39: Count up to 10 objects in varied configurations. Lesson 40: Tally 10 objects. Lesson 41: Look at a numeral and count out a group of up to 10 objects. Lesson 42: Culminating Task—represent numbers 6–10 using objects, images, and numerals in a number book.	8
		End-of-Module Assessment: Topics E–H (interview style assessment, 4 days)	4
Total Number of Instructional Days			**50**

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Fluency

New Fluency Topics Appearing in Module 3 Instruction

- Count 0–10 in different configurations
- Count one-to-one within 10
- Make a group of 0 to 8 objects
- Rote count to 10
- Within 8, find 1 more/1 less

Familiar Fluency

- Count 1–5 in different configurations
- Count one-to-one within 5
- Make a group of 1 to 5 objects
- Tally numbers 1–5
- Within 5, find 1 more/1 less

Terminology

New or Recently Introduced Terms

- 0, 6, 7, 8, 9, 10 (numerals)
- Tally marks (lines used to record a count)
- Zero, eight, nine, ten (number words)

Familiar Terms and Symbols[2]

- 1 less (e.g., 1 less than 7 is 6)
- 1 more (e.g., 1 more than 6 is 7)
- 1, 2, 3, 4, 5 (numerals)
- After (position word, e.g., "What comes after…?")
- Count backward
- Count (with reference to use of number core)
- Counting the Math Way (count fingers from left pinky to right pinky)
- Different (characteristic used to analyze objects to match or sort)
- Exactly the same (characteristic used to analyze objects to match or sort)

[2]These are terms and symbols students have seen previously.

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- Group (objects sharing one or more attributes)
- How many (with reference to counting quantities or sets)
- Line (with reference to counting configuration)
- Mark (with reference to starting point for count)
- Match (group items that are the same or that have the same given attribute)
- Number (numeral)
- One, two, three, … , seven (number words)
- Partners (embedded numbers)
- Shapes (rectangle, triangle, square, circle)
- Side (position or with reference to a shape)
- Sort (group objects according to a particular attribute)
- The same, but… (characteristic used to analyze objects to match or sort)

Suggested Tools and Representations

- 10 puppies template (Lesson 37)
- 10-count egg cartons
- 2 cans of tennis balls or tennis balls template (Lesson 25)
- 6–7 picture cards (Lesson 9)
- Animal array cards (Lesson 34)
- Animal array template (Lesson 25)
- Bingo boards (Lesson 39)
- Circular configuration cards (Lessons 8, 17, 27, 37)
- Commercial concrete materials (e.g., linking cubes, blocks, foam shapes, tiles)
- Concrete materials (e.g., white beans spray painted red on one side, craft sticks, bags of twigs, dried leaves, seeds, dry pasta, plastic eggs, pennies, dimes, cotton balls, plates, forks, spoons, cups)
- Creek mat (Lessons 2, 13, 23, 32)
- Crown template (Lesson 17)
- Dominoes
- Dot cards 0–10
- Dot cards in 5-group formation (Lesson 34)
- Double-sided counters (e.g., red and white)
- Flower template (Lesson 37)
- Number path
- Number stairs
- Number tower
- Numeral cards, 0–10
- Nursery rhyme template (Lesson 25)

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- Objects 6–7 template (Lesson 8)
- Objects 6–8 template (Lesson 17)
- Ollie Octopus template (Lesson 12)
- Orange slice template (Lesson 31)
- Pairs of socks
- Partners of 6, 7, 8, 9, 10 puzzles (Lessons 6, 7, 16, 26, 35)
- Sets of numerals to 10 (cardboard, foam, etc.)
- Socks template (Lesson 15)
- Ten dot mat
- Underwater mat (Lesson 9)
- Wipe-off slates or personal white boards

Scaffolds[3]

The scaffolds integrated into *A Story of Units* give alternatives for how students access information as well as express and demonstrate their learning. Strategically placed margin notes are provided within each lesson elaborating on the use of specific scaffolds at applicable times. They address many needs presented by English language learners, students with disabilities, students performing above grade level, and students performing below grade level. Many of the suggestions are organized by Universal Design for Learning (UDL) principles and are applicable to more than one population. To read more about the approach to differentiated instruction in *A Story of Units,* please refer to "How to Implement *A Story of Units*."

Assessment Summary

Assessment Type	Administered	Format	Standards Addressed
Mid-Module Assessment Task	After Topic D	Constructed response with rubric	(Numbers from 1–8) PK.CC.1 PK.CC.3abc PK.CC.4
End-of-Module Assessment Task	After Topic H	Constructed response with rubric	(Numbers from 0–10) PK.CC.1 PK.CC.3abc PK.CC.4

[3]Students with disabilities may require Braille, large print, audio, or special digital files. Please visit the website www.p12.nysed.gov/specialed/aim for specific information on how to obtain student materials that satisfy the National Instructional Materials Accessibility Standard (NIMAS) format.

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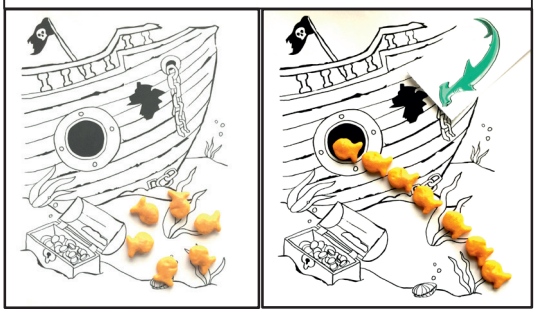
Grade PK • Module 3 • Topics A–D

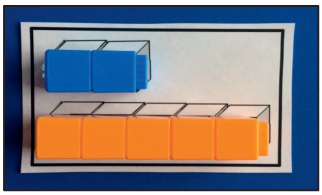
Family Math Newsletter

Counting to 10

In the first half of Module 3, students build on their work with numbers to 5 as they explore groups of 6, 7, and 8 objects. Children learn to touch and count up to 8 objects arranged in different ways (e.g., in a straight line or in rows) and extend their ability to make tallies, recognize numerals, and count on their fingers the Math Way (from left to right). Additionally, students strengthen their understanding of *1 more* and discover different ways to take apart numbers (e.g., 7 cubes can be broken up into 5 cubes and 2 cubes).

(Below) Students touch and count objects arranged in lines and circles.





(Above) Students learn to take apart 7 by matching linking cubes to a Partners of 7 Puzzle piece.

Key Standards

- Know number names and the count sequence.
- Count to tell the number of objects.
- Understand that each successive number name refers to a quantity that is 1 larger.

Looking Back

In Module 2, we identified, described, and built shapes.

Looking Ahead

In Topics E–H of Module 3, we will explore 0, 9, and 10. We will spend the most time with 10 since it is foundational to understanding place value.

How to Help at Home

- Touch and count up to 8 objects together. During playtime, count up to 8 toy cars. Move the cars into a line or a circle and count again.
- Buy or make a set of numerals from 1 to 8 (paper, foam, or magnets work well). Show a number on your fingers. Ask, "Which number shows how many fingers I am holding up?" Switch roles and let your child show a number on his fingers.
- Ask for help with counting during everyday experiences. While cooking, say, "I need 6 mushrooms. Can you count out 6 mushrooms for me?"
- Continue to sing songs that involve counting forward or back, such as "The Ants Go Marching," "This Old Man," "Eight Little Ducks Went Out to Play," or "Eight Little Monkeys Jumping on the Bed."

Words and Key Terms

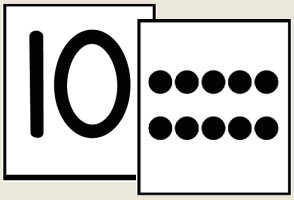
Terminology

- Counting the Math Way
- Eight (8)
- How many?
- Number path
- One more/larger
- One less/smaller
- Pair
- Seven (7)
- Six (6)
- Tally mark

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Spotlight on Math Models

Children will use key mathematical models throughout their elementary years. One of these models is the 5-group, a tool Pre-Kindergarten students will use to show and work with numbers 1–10.



Sample Chant

(from Module 3, Lesson 12)

One Potato, Two Potato

Students say the "One Potato, Two Potato" rhyme to help their teacher count the potatoes she will slice to make french fries:



One potato, two potato,

Three potato, four,

Five potato, six potato,

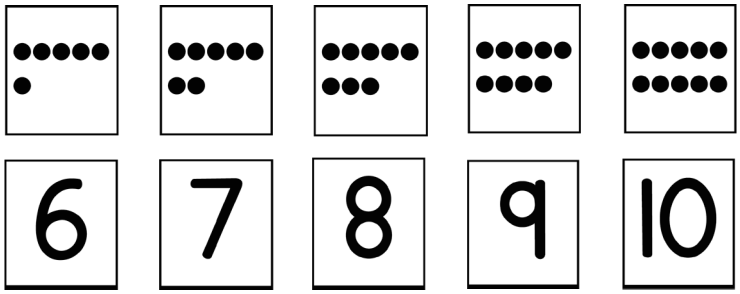
Seven potato, more.

The teacher then asks, "What does *more* mean?" She adds another potato to the group and says, "What is 7 and *1 more*? Let's count!"

This task reviews counting up to 7 objects, as well as the concept of 1 more. In the lesson that follows, students build on this understanding to relate 7 and 1 more to 8.

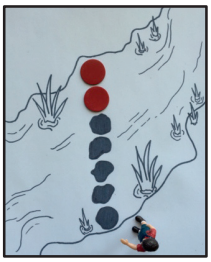
5-Groups

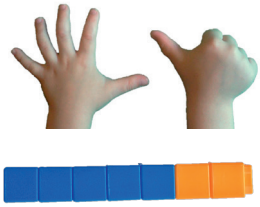
Five is a key number in helping children understand 6, 7, 8, 9, and 10. 5-groups organize these numbers as 5 and some more (e.g., 6 is 5 and 1 more, or 5 + 1). One easy way to see this relationship is with dots lined up in groups of 5 as pictured below. These make it easy to see each number in relation to 5 (5 + 1, 5 + 2, 5 + 3, 5 + 4, 5 + 5). Without experience with 5-groups, children have little understanding of numbers 6–10 other than a general sense that the numbers are getting larger.



Why is this important? The patterns that you see in the dot cards above can be used as tools for solving addition and subtraction problems in Kindergarten and Grade 1. For example, you can easily see that 8 – 3 = 5 and 8 – 5 = 3. You can also see that 8 needs 2 more to make 10.

Dots are not the only way to show 5-group formations. Fingers clearly show the relationship between 5 and the numbers 6–10 (5 fingers on one hand and some more fingers on the other hand). A color change at 5, or organization of objects or drawings in groups of 5, can also help children see this important relationship.







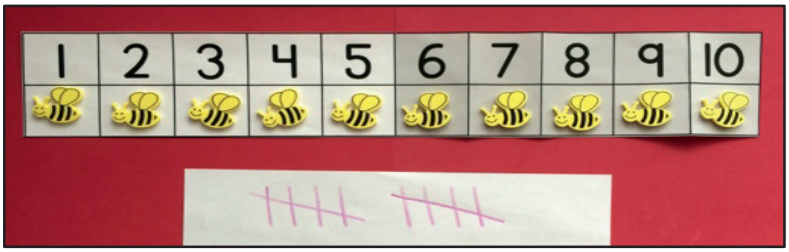
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Grade PK • Module 3 • Topics E–H

Family Math Newsletter

Counting to 10

In the second half of Module 3, students build on their previous number work as they explore groups of 0, 9, and 10 objects. More time is spent with 10, since it is important for understanding place value in later grades. Children learn to touch and count up to 10 objects arranged in different ways (e.g., in a straight line or in a circle) and extend their ability to make tallies, recognize numerals, and count on their fingers the Math Way (from left to right). Students strengthen their understanding of *1 more* and discover different ways to take apart numbers (e.g., 10 cubes can be broken up into 9 cubes and 1 cube).



At the Pollen Café, students place bee customers in their seats on the number path and learn to identify the total number of bees both by counting and using the corresponding numerals on the number path. The teacher models how to make tallies before students practice on their own.

Key Standards

- Know number names and the count sequence.
- Count to tell the number of objects.
- Understand that each successive number name refers to a quantity that is 1 larger.

Looking Back

In the first half of Module 3, we expanded on our work with numbers to 5 to explore 6, 7, and 8.

Looking Ahead

In Module 4, students will learn to compare as they explore length, weight, and capacity. They will also strengthen their understanding of numbers as they compare sets of up to 5 objects.

How to Help at Home

- Touch and count up to 10 objects together. During playtime, count up to 10 blocks, lining them up as you count. Stack the blocks and count again. The number of blocks stays the same!
- Look for numerals when walking, driving, or taking the bus. "I see the number 10. Let's clap 10 times!"
- At snack time, line up 10 blueberries and ask your child to count them. Each time she eats a berry, have her touch and count how many are left.
- Use the illustrations in picture books to count as you read together. "I wonder how many vegetables Mr. McGregor planted in his garden. Let's count them!"
- Share information about your child's counting with the teacher. If you notice that your child is skipping a number while counting, communicate that in a note to the teacher.

Words and Key Terms

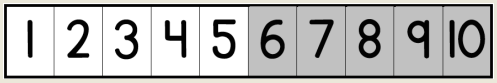
Terminology

- Counting the Math Way
- Counting in a circle
- Counting in a line
- Counting in rows
- How many?
- Nine (9)
- Number path
- One more/larger
- One less/smaller
- Put together
- Take apart
- Tally mark
- Ten (10)
- Zero (0)

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Spotlight on Math Models

Children will use key mathematical models throughout their elementary years. One of these models is the number path, a tool Pre-K students will use to connect counting and numbers 1–10.



Sample Activity
(from Module 3, Lesson 29)

Pollen Café

As waiters at the Pollen Café, students place bee customers in special seats on the number path. Then, they tally the orders for flowers.



Children bring back the correct number of flowers and give each bee a snack.

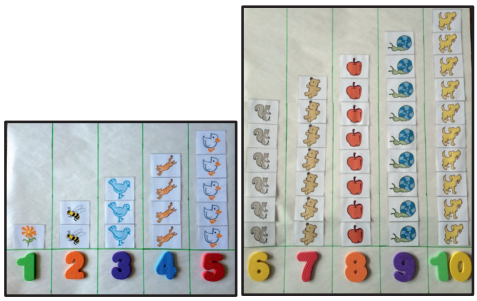


This task reviews counting up to 9 objects and introduces tallying to 9. The number path supports children in counting and matching their count to a numeral.

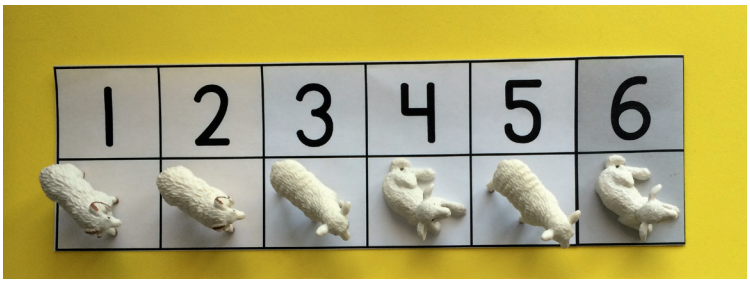
Number Path

The number path is used in Pre-K, Kindergarten, and Grade 1 to help children work with numbers and visualize the number sequence. The number path starts at 1 and has a single space for each number. A color change at 5 shows the relationship between 5 and the numbers 6, 7, 8, 9, and 10.

Starting in Module 1, children began to see the number path to 5 using stairs that show the total number at each step (as pictured on right). In this module, children continue to build the number path to 10, noticing that each number in the sequence is 1 larger.



In Module 3, children work with the path in a new way, placing one object in each space on the number path. Children also see that the last number said (and the last space filled) tells the number of objects counted. For example, in the image of the sheep below, the student can touch and count the sheep and come to understand that the numeral 6 tells the total number of sheep.



In Kindergarten and Grade 1, students will learn to use the number path to solve addition and subtraction problems.

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Topic A

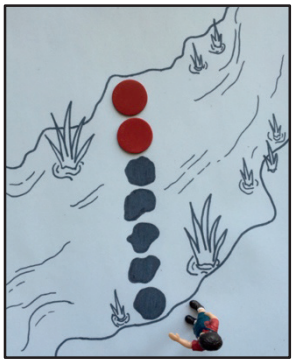
How Many Questions with up to 7 Objects

PK.CC.1, PK.CC.3abc, PK.CC.4

Focus Standards:	PK.CC.1	Count to 20.
	PK.CC.3abc	Understand the relationship between numbers and quantities to 10; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement of the order in which they were counted. c. Understand that each successive number name refers to a quantity that is one larger.
	PK.CC.4	Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects.
Instructional Days:	5	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

In Topic A, children build upon the understanding of the number core from Module 1, now including quantities of 6 and 7.

Lesson 1 introduces 6 and 7 in the context of a soccer team looking for more players. Children count with one-to-one correspondence as the team of 5 gets *1 more* player: "Now, we have a team of 6." Similarly, when 1 more player is added to the team of 6, the students count 7 players (**PK.CC.3abc**).

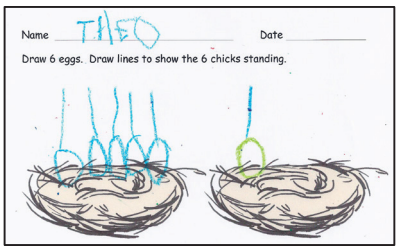


Lesson 2 further explores 6 and 7 in relationship to 5. In order to help an explorer cross the creek, students must create a line of rocks from counters. There are already 5 rocks, but students must add *1 more* rock (red counter), and then touch and count from 1 to 6. To get all the way across the creek, they must add another rock, and then touch and count from 1 to 7 (**PK.CC.3c**).

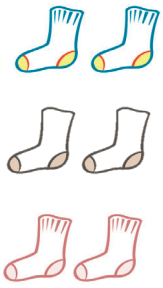
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The color change in the rocks emphasizes the relationship to 5 as children count 6 and 7 in a linear configuration. This lesson hints at the *counting on* strategy that children use early in Grade 1.

In Lessons 3 and 4, children extend their ability to count the Math Way, now including the thumb of the right hand for 6 and the right index finger for 7. At this stage, children extend fingers for counting to show chicks (fingers) hatching from their nest (fist). During partner practice, students make lines on the nests in the Problem Set to show the chicks that have hatched. As students continue to practice counting fingers (as chicks hatching and standing) from left to right next to a nest, they use two different ways of determining how many are in a given set.



In Lesson 5, children are introduced to arrays in the context of sorting laundry. First, they arrange 4 socks in an array. Then, they add another pair and count 6 socks in a 3 by 2 array. Children develop an organized counting path through the array (e.g., left to right, top to bottom).



Throughout Topic A, children develop fluency counting with one-to-one correspondence through touch and count activities to 7 using manipulatives such as pennies and cotton balls. Students also maintain familiarity with building shapes and tallying up to 5 using craft sticks. The use of engaging materials and simple games allows children to build number sense joyfully.

A Teaching Sequence Toward Mastery of *How Many* Questions with up to 7 Objects

Objective 1: **Introduce 6 and 7, and relate 6 to 5 and *1 more* and 7 to 6 and *1 more*. (Lesson 1)**

Objective 2: **Use linear configurations to count 6 and 7 in relation to 5. (Lesson 2)**

Objective 3: **Count to 6 and 7 left to right with fingers. (Lessons 3–4)**

Objective 4: **Count 6 objects in array configurations. (Lesson 5)**

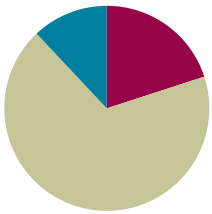
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Lesson 1

Objective: Introduce 6 and 7, and relate 6 to 5 and *1 more* and 7 to 6 and *1 more*.

Suggested Lesson Structure

Fluency Practice	(5 minutes)
Concept Development	(17 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (5 minutes)

- Clap and Count to 6 and 7 **PK.CC.1** (2 minutes)
- Triangle Sides **PK.CC.3a** (3 minutes)

Clap and Count to 6 and 7 (2 minutes)

Note: Rote counting to 6 and 7 prepares students for the objective of touching and counting to 6 and 7 by adding 1 more.

T: Let's clap 6 times and count our claps! Join in when you are ready. 1, 2, 3, 4, 5, 6. (Repeat until most students are either clapping, counting, or ideally, clapping and counting. Pause between counts.)

T: Let's pat our heads 6 times and count our pats! 1, 2, 3, 4, 5, 6. (Follow the same process as above.)

T: Let's clap 7 times and count our claps! 1, 2, 3, 4, 5, 6, 7.

T: Let's pat our heads 7 times and count our pats! 1, 2, 3, 4, 5, 6, 7.

Triangle Sides (3 minutes)

Materials: (S) 10 craft sticks per pair (placed on tables)

Note: Throughout Topic A, children line up and count craft sticks as a foundation for tallying numbers to 10.

T: Carefully get the number of sticks you need to make the sides of a triangle.

T: Make them into a triangle on your table.

T: Move your sticks so they're next to each other instead of making a triangle. Now, line them up so they are like three students standing next to each other.

T: Move them back again to make a triangle.

T: Move them next to each other again.

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Concept Development (17 minutes)

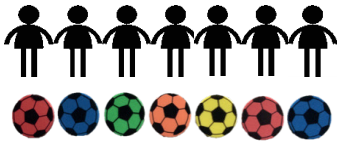
Part 1: Concept Introduction

Materials: (T) 7 objects to represent players, 7 objects to represent balls (e.g., dolls, bean bags)
(S) Small resealable bag with 7 objects to represent balls (e.g., counters, beans)

Line up 5 soccer players in front of the class.







1. Point to the soccer players, and say, "This is the Pre-K soccer team. How many players are on the team?" Children count 5 players.
2. Count out 5 soccer balls, 1 for each player. Have children do the same.
3. Say, "The team needs 1 more player." Place a doll to join the team. "Let's point to each player and count together: 1, 2, 3, 4, 5, 6. How many players are there now?" Guide children to say, "There are 6 players."
4. Say, "We had 5 players, and we added…?" Students respond, "1 more."
5. Ask, "How can we make the number of soccer balls match the number of players? What do we need to do?" Guide students to see that they need to add 1 more ball. Touch and count the soccer balls together, "1, 2, 3, 4, 5, 6."
6. Say, "We had 5 soccer balls and we added…?" Students respond, "1 more." Have children repeat, "5 and 1 more is 6."
7. Repeat Steps 3–6 to count 7 players and balls.

Part 2: Practice

Materials: (S) Bag containing 7 cubes (5 of one color or type, 2 of another color or type), Problem Set, crayons

Send students to tables with their bags.

1. Say, "These cubes are your soccer players. Touch and count all of your red players. How many players do you have? Tell your partner."
2. Invite children to put 1 more player on the team using 1 of the yellow cubes. Say, "Touch and count your players. How many players do you have now? Tell your partner." MP.6
3. Repeat Step 2 to count 7 players.
4. Distribute a Problem Set to each child. Instruct students to touch and count the first line of soccer balls for their partner.

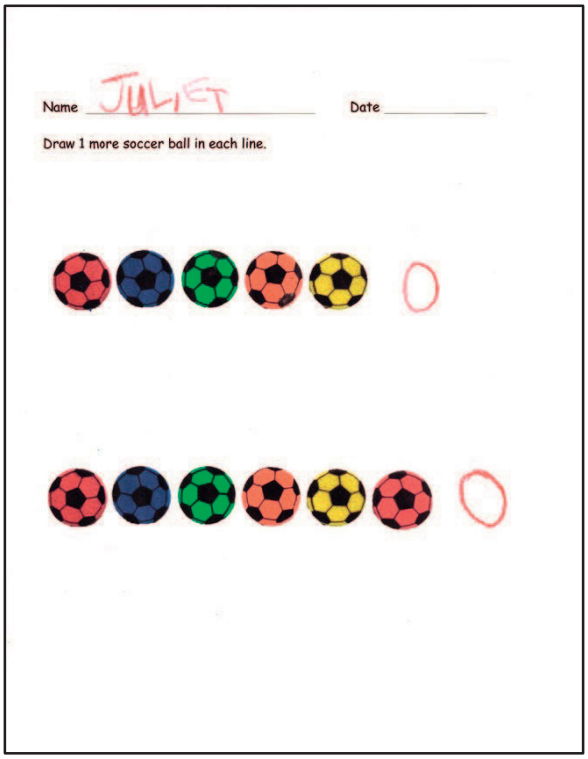
NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Circulate and listen to all students as they count their soccer players, checking for one-to-one correspondence. Assist students who are having difficulty by guiding their hands as they touch each player and count 1, 2, 3, 4, 5, 6.

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5. Show children how to draw 1 more ball on the first line and say, "I had 5 soccer balls. I drew 1 more!" Then, have them recount to 6.

MP.6 6. Repeat Steps 4 and 5 for the second line of soccer balls. Circulate as students work, asking questions and making suggestions such as, "How many soccer balls are in this line?" "Put 1 more." "Count how many there are now."



Student Debrief (3 minutes)

Lesson Objective: Introduce 6 and 7, and relate 6 to 5 and *1 more* and 7 to 6 and *1 more.*

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- When we had 5 soccer players, did we put 1 more to make 6? When we had 6, what did we do to make 7?
- (Show a completed Problem Set.) Watch as I count these soccer balls: 1, 2, 3, 4 (skip object), 5, 6. What mistake did I make?
- I want to count to 6. Do I have to know how to count to 5 to do that? I want to count to 7. Do I have to know how to count to 6 to do that?

CENTER CONNECTION:

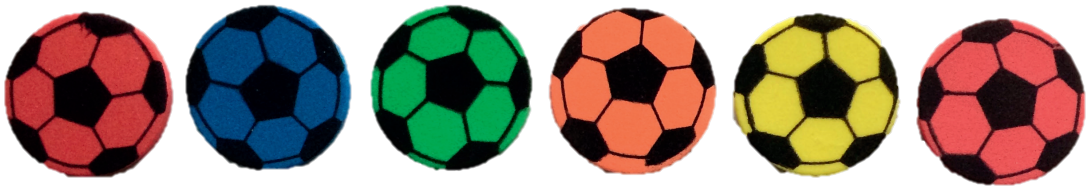
Have children count out a group of 5 blocks in the block center. Add 1 more block, and ask them to count how many. Then, add 1 more block, and have them count again. Finally, ask them to stack the blocks and count. Some students use conservation to understand that the number of blocks does not change when the blocks are rearranged.

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Name _____ Date _____

Draw 1 more soccer ball in each line.





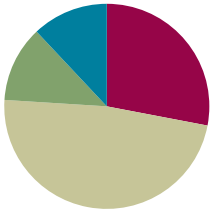
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Lesson 2

Objective: Use linear configurations to count 6 and 7 in relation to 5.

Suggested Lesson Structure

Fluency Practice	(7 minutes)
Application Problem	(3 minutes)
Concept Development	(12 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (7 minutes)

- Tally 3 Objects **PK.CC.3a** (3 minutes)
- Touch and Count Beans **PK.CC.1** (4 minutes)

Tally 3 Objects (3 minutes)

Materials: (T) 3 of the same item (e.g., tall boxes, identical dolls, or teddy bears) (S) Paper and crayon (or white board)

Note: Throughout Topic A, students tally up to 5 objects as a foundation for tallying numbers to 10.

T: (Put one tall box on the table.) Let's draw a line to stand for this box. Draw a straight line on your paper from top to bottom.
S: (Draw line.)
T: How many lines have you drawn?
S: 1.
T: How many boxes are there on the table?
S: 1.
T: (Put one more box on the table.) Let's draw a line to stand for this box next to our other line.
S: (Draw line.)
T: How many lines have you drawn now?
S: 2.
T: How many boxes are there on the table?
S: 2.

Repeat the process with one more box.

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

Provide students who are unable to draw vertical lines an alternative way to respond. For example, popsicle sticks could be used to represent the number of boxes. Also provide alternative times to practice making vertical lines using a variety of media, such as markers or paints.

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Touch and Count Beans (4 minutes)

Materials: (S) Bag of 7 beans

Note: Use this activity as an opportunity to informally evaluate students' performance level with counting, and modify counting activities in Module 3's fluency to accommodate their needs.

T: Put 5 beans in a line. (Pause as students do so. Observe their strategies. Gently remove beans from those who struggle to count to 5 accurately until they have a number of beans they can touch and count with one-to-one correspondence. Make note of those students' performance level with counting, and modify Module 3's fluency as possible to differentiate.)

T: (Quietly address students who are able to count to 5 correctly.) Jenny, Alexis, and Marta, put 1 more bean at the end of the line.

T: Touch and count how many beans you have now. (Pause as students touch and count. Observe carefully.) How many beans do you have now?

S: 6.

T: Count them again! See if you get better at counting them! (Continue to observe.)

Have students count until they have mastered counting 6 beans. Encourage students who have mastered counting 6 beans to put 1 more bean in the line.

Application Problem (3 minutes)

Materials: Upbeat music, audio equipment

Invite 5 students forward to create a conga line. Start the music, and have children move around the room until the music stops. Then, count the number of children in the line. Invite 1 more child to join in the fun, then 1 more up to 7 students. Each time 1 more child joins the line, ask the *how many* question after counting. Repeat the activity with different dancers, as time allows, so all students have an opportunity to participate in the conga line.

Note: This Application Problem is designed to practice the concept of *1 more* from the previous lesson as students use a linear configuration to count up to 7.

Concept Development (12 minutes)

Part 1: Concept Introduction

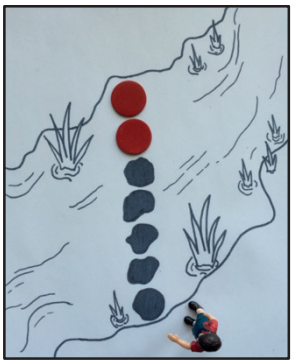
Materials: (T) Creek mat (Template), 2 double-sided counters (e.g., red and white), explorer figurine (optional)

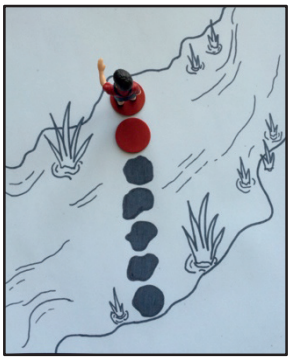
Gather children in a circle around the creek mat.

NOTES ON LANGUAGE DEVELOPMENT:

Activate or build children's background knowledge by talking about explorers in advance of this lesson. Knowing that explorers travel to find out about new places helps children understand why the explorer needs to cross the creek.

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1. Introduce students to the explorer, and explain that he needs to cross the creek. Point out the line of rocks. Ask a volunteer to move the explorer across each rock while the class counts, "1, 2, 3, 4, 5."
2. Ask, "Do you think the explorer could cross if there was 1 more rock?" Add 1 red counter to the line.
3. Ask, "How many rocks are there now?" Have another volunteer move the explorer across each rock while the class recounts 5 with 1 more, "1, 2, 3, 4, 5, 6. There are 6 rocks."
4. Say, "We had 5 rocks, and we added…?" Students respond, "1 more!"
5. Repeat Steps 2–4 to count 7 rocks, recounting 6 with 1 more.
6. Ask, "How many black rocks were there?" "How many red rocks did we use?" "How many rocks did the explorer need altogether to cross safely?" Give children an opportunity to count after each question.

Part 2: Practice

Materials: (S) Creek mat (Template), 7 double-sided counters (e.g., red and white)

1. Send students to prepared tables: "It's your turn to help the explorer cross the creek." Make sure children know that the counters are double-sided.
2. Say, "First, take out your counters, and cover the rocks in the creek. Use the white side. Tell your partner how many rocks are in the line."
3. Say, "Now, put a red rock in the line. Use your math words to tell your partner what you did." A student might say, "I put 1 more," or "I put another rock," or "I made the path longer."
4. Guide students to count the white rocks, the red rocks, and then *all* the rocks each time they put 1 more in the line.
5. Repeat Steps 3 and 4 to show 7 rocks in the line. Have students use their finger to represent the explorer and cross the creek! Celebrate the explorer's crossing.

Student Debrief (3 minutes)

Lesson Objective: Use linear configurations to count 6 and 7 in relation to 5.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

CENTER CONNECTION:

Invite children to use 7 mats or hula hoops as "rocks" in the dramatic play center. Allow students to naturally incorporate the rocks into their play. If they use the rocks to create a path, have them count each rock as they walk across the path.

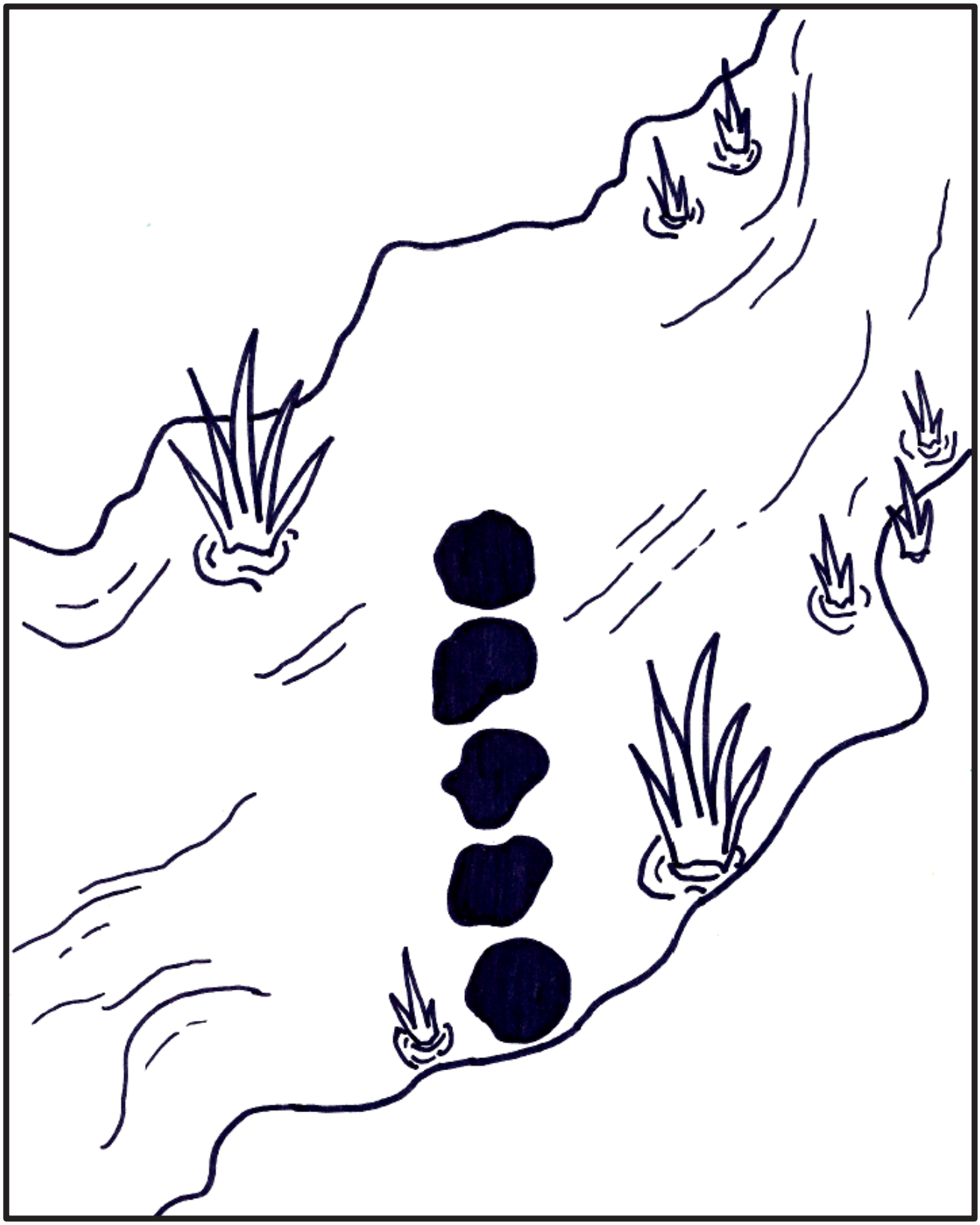
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As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- How many rocks were in the creek at first? Count your fingers on your left hand. (Pause.) Five rocks and 5 fingers. It's the same number!
- What did you need to do to help the explorer to cross the creek?
- Count the black rocks. (Pause as students count.) Count the red rocks. (Pause.) Count *all* the rocks. (Pause.) How many rocks did you count altogether?
- (If students are ready, consider asking the following question and demonstrating with linking cubes.) Listen to my pattern: 3 and 1 more is 4. 4 and 1 more is 5. 5 and 1 more is…? 6 and 1 more is…?

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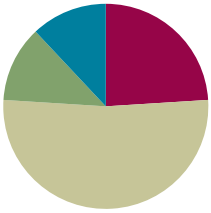
creek mat

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Lesson 3

Objective: Count to 6 and 7 left to right with fingers.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Rectangle Sides **PK.CC.3a** (3 minutes)
- Touch and Count Rocks **PK.CC.1** (3 minutes)

Rectangle Sides (3 minutes)

Materials: (S) 10 craft sticks per pair (placed on desks)

Note: Throughout Topic A, children line up and count craft sticks as a foundation for tallying numbers to 10.

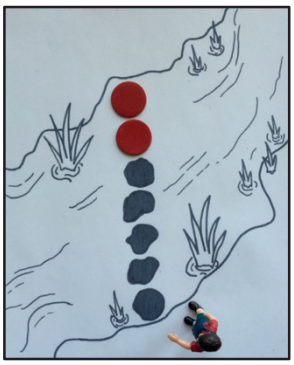
T: Find and take the number of sticks you need to make the sides of a rectangle.

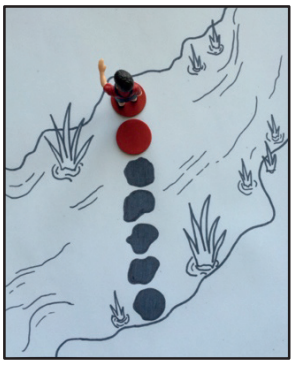
T: Make them into a rectangle on your table.

T: Move your sticks so they're next to each other instead of making a rectangle. Now, line them up so they are like four students standing next to each other.

T: Move them back again to make a rectangle.

T: Move them next to each other again.





Touch and Count Rocks (3 minutes)

Materials: (S) Creek mat (Lesson 2 Template), 2 double-sided counters

Note: Students build from counting 5 objects to counting 7 objects. Those who struggle with touching and counting to 5 might be partnered with stronger students for this activity so that they have a chance to observe precision.

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T: Touch and count the rocks that are in place for you to cross the creek. (As students do so, observe their counting strategies and synchronization of number words and movements.)
T: How many are there?
S: 5.
T: Put 1 more rock so you can get closer to the other side. Now, touch and count the rocks.
T: How many rocks are there now?
S: 6.
T: Put 1 more rock so you can get all the way to the other side. Now, touch and count the rocks.
T: How many rocks are there now?
S: 7.
T: Yeah! Are you better at counting to 7 today?
S: Yes!

Application Problem (3 minutes)

Note: Perspective is important when demonstrating how to count the Math Way (from left pinky to right pinky). When sitting beside students (both facing the same direction), model the count starting from the left pinky. When facing students, model the count starting from the right pinky, as children tend to mirror the teacher from this perspective.

T: It's almost spring, and all the baby chicks (wiggle fingers) are warm inside their eggs inside their nests (make two fists on a surface). Are all the eggs inside the nest?
S: Yes!
T: When spring comes, the chicks begin to hatch from the eggs. (Show one egg hatching by extending the left pinky finger.) Show on your fingers: How many came out?
S: 1 (show their left pinky finger extended).
T: Another chick hatches.
S: (Extend their ring finger next to their pinky.)
T: How many are out now?
S: 1, 2. 2 chicks!

Repeat the story until 5 chicks have hatched from the eggs.

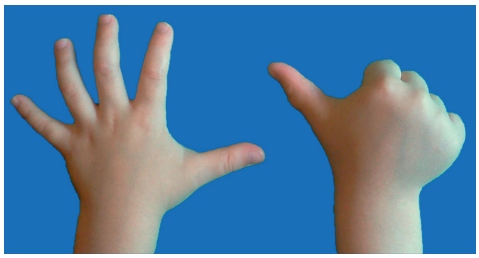
Note: In anticipation of the Concept Development, students become familiar with the chicks and review counting the Math Way to 5.

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Concept Development (13 minutes)

Part 1: Concept Introduction

1. The teacher pretends his or her fingers are chicks. Show all the chicks in eggs in a nest (two fists on a surface).
2. Demonstrate the first 5 hatching, starting with the smallest (left hand pinky), without pausing. Have the children count the chicks as they come out, "1, 2, 3, 4, 5."
3. Say, "There are more chicks waiting to hatch! (Shake right fist.) One of them hatches and comes out." Have 1 more chick hatch (right hand thumb).
4. Tell them, "Let's count how many chicks have hatched." To support the count, lift the fingers off the surface, and then drop them as students count. Have them count, "1, 2, 3, 4, 5, 6."



5. Have students show their nests and their chicks. Have them put all the chicks in their eggs inside their two nests (two fists), and then count 6 chicks hatching, starting with the first chick.
6. Possibly ask how many chicks are waiting to hatch.
7. Say, "Guess what? We just used our fingers to count the Math Way!"

Part 2: Practice

Materials: (S) Problem Set

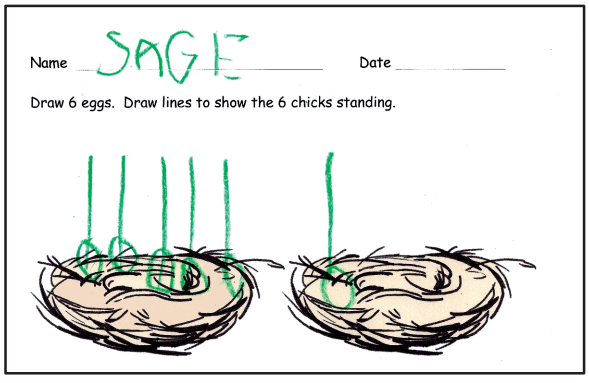
1. Have students make their fists on top of the nests on the Problem Set. Six chicks (fingers) come out, 1 at a time from left to right, as students count to 6.
2. Have students draw a line to show each chick that has hatched. (Demonstrate one possible way of showing that, if it seems necessary.)

MP.6

3. Ask questions while circulating. "How many chicks hatched? How many are still in eggs?" "How many chicks hatched in this nest? This one?" "Which was the first chick to come out? The last?"
4. Ask the children to show their partner two ways to count the chicks that hatched, by touching and counting using their pictures and by counting on their fingers.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Students who are ready can role-play as the teacher and retell the chick story for a partner to count using his or her fingers. Students could also tell their own creative story that would elicit finger counting to 6 or 7.



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Student Debrief (3 minutes)

Lesson Objective: Count to 6 and 7 left to right with fingers.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Show me your two nests. (Students show two fists.) Show me all the eggs. (Students show all their fingers.) On your fingers, show me the chicks that hatched today.
- (Display a completed Problem Set while children continue to show 6 fingers.) How is your picture of the chicks that hatched like the 6 fingers you are showing?
- What do you like about counting on your fingers to 6 using your two nests?
- What is different about counting to 5 and counting to 6 on your fingers?
- When you counted the Math Way, you started with one hand and moved to the other. Is there anything else we do in the same direction?

CENTER CONNECTION:

In the sensory center, provide opportunities for students to practice moving 6 fingers through a variety of materials (e.g., sand, oatmeal, shaving cream, finger paint). Use the chick context as a starting point, but invite children to make up other stories about their 6 fingers and the 6 paths that they create. This activity helps build fine motor muscles needed for counting the Math Way.

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Name _____ Date _____

Draw 6 eggs. Draw lines to show the 6 chicks standing.



Name _____ Date _____

Draw 6 eggs. Draw lines to show the 6 chicks standing.



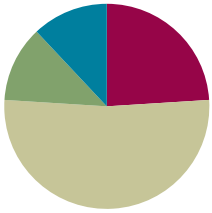
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Lesson 4

Objective: Count to 6 and 7 left to right with fingers.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Tally 4 Apples **PK.CC.3a** (3 minutes)
- Touch and Count Pennies **PK.CC.1** (3 minutes)

Tally 4 Apples (3 minutes)

Materials: (T) 4 apples (S) Paper and crayon (or white board)

Note: Throughout Topic A, students tally up to 5 objects as a foundation for tallying numbers to 10. Omit the demonstration if the children can do the tally independently.

T: (Put 4 apples on the table.) I will touch as you count the apples.
S: (Vary the pace of touching the apples so that students are attentive to say the number word when the apple is touched, not before or after. Make it playful. Try to trick them!)
T: How many apples did we count?
S: 4.
T: Let's draw a line that stands for each apple we count. How many lines will I draw?
S: 4. (Demonstrate drawing 4 vertical lines. Count out loud while drawing.)
T: Now, it's your turn. Count out loud as you draw like I did.
S: (Draw 4 tally marks, one for each apple.)

Touch and Count Pennies (3 minutes)

Materials: (S) Small resealable bag with 7 pennies

Note: This activity gives children practice counting out a new group of 5 objects, and then creating a group of 6 by including 1 more. Different objects offer new challenges. Students may be distracted by the markings on the pennies and struggle more (or less) than they did counting beans.

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T: Put 5 pennies in a line. (Pause as students do so. Observe their strategies. Gently remove pennies from those who struggle to count to 5 accurately until they have a number they can touch and count with one-to-one correspondence.)

T: (Discretely address students who are able to count to 5 correctly.) Jenny, Alexis, and Marta, put 1 more penny at the end of the line.

T: Touch and count how many pennies you have now. (Pause as students touch and count. Observe carefully.) How many pennies do you have now?

S: 6.

T: Count them again! See if you get better at counting them! (Continue to observe.)

Have students count until they have mastered counting 6 pennies. Encourage students who have mastered counting 6 pennies to put 1 more penny in line.

Application Problem (3 minutes)

Say this as one would the classic rhyme "Teddy Bear," inviting all the children to act out the directions in place.

Baby Chick, Baby Chick, turn around.

Baby Chick, Baby Chick, touch the ground.

Baby Chick, Baby Chick, climb the stairs.

Baby Chick, Baby Chick, brush your hair.

Baby Chick, Baby Chick, blow out the light.

Baby Chick, Baby Chick, say goodnight.

After all the children have participated, invite 1 child forward to follow the 6 actions in the rhyme while the remaining children count to 6 the Math Way on their fingers. They add another finger each time another direction is given and they see a new action. Ask, "How many directions did the baby chick follow?"

Note: As children are becoming more aware of routines and chores, this Application Problem allows them to keep track of a series of directions by counting to 6 on their fingers. If students are not familiar with the rhyme, simply perform the actions, and have students count the number of actions.

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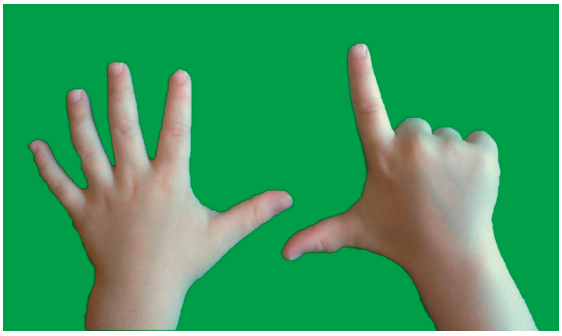
Concept Development (13 minutes)

Part 1: Concept Introduction

1. Again, the teacher pretends his or her fingers are chicks (wiggling fingers). Then, show students the chicks in eggs waiting to hatch in their nests (two fists on a surface).
2. As in Lesson 3, demonstrate the first 5 hatching (starting with the left pinky) without pausing. Have the children count the chicks as they emerge, "1, 2, 3, 4, 5."
3. Say, "There are more chicks in this nest. (Shake the right fist.) Two of them are ready to hatch." Have 2 more chicks hatch, one at a time, the next two closest to the others who have already come out (the thumb and index finger of the right hand).
4. Tell them, "Let's count how many chicks hatched." To support a precise count, lift the fingers off the surface, and then drop them as students count. Have them count, "1, 2, 3, 4, 5, 6, 7."
5. Have students show their nests and their chicks. Have them pretend all the chicks are in their eggs in the nests (two fists), and then count 7 chicks hatching again, starting with the pinky.
6. Possibly ask how many chicks are waiting to hatch.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Throughout the Concept Development, check frequently for understanding. English language learners and students developing language may shy away from asking questions. Highlight the mathematics within the story for students who may become bogged down with the story language. Or, conversely, jazz up the story for those getting bogged down in the counting.

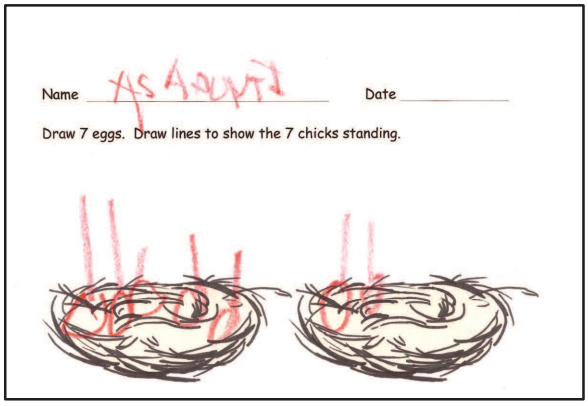


Part 2: Practice

Materials: (S) Problem Set

1. Have students make their fists on top of the nests on the Problem Set. Seven chicks (fingers) come out, 1 at a time. Have them count from left to right as they do.
2. Have students draw a line to show each chick that hatched. (Demonstrate one possible way of showing that, if necessary.)
3. Ask differentiated questions while circulating. "How many chicks hatched? How many are still waiting to hatch?" "How many chicks were in this nest? How many were in this nest?" "How many chicks hatched in this nest? This one?" "Which was the first chick to hatch? The last?"

MP.6



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4. Ask the children to show their partner two ways to count the chicks who hatched, by touching and counting using their picture and by counting on their fingers.

Student Debrief (3 minutes)

Lesson Objective: Count to 6 and 7 left to right with fingers.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Show me your two nests (two fists). Show me all the eggs. (Students show all their fingers.) On your fingers, show me the chicks that hatched today.
- (Display a completed Problem Set while children continue to show 7 fingers.) How is the picture of the chicks that hatched like the 7 fingers you are showing?
- (Show completed Lesson 3 Problem Set and current Problem Set.) Let's compare our picture from today to our picture from yesterday. How is it the same? How is it different?

CENTER CONNECTION:

Invite children to finger paint the chicks in the nests. If they are ready, have them show 7 chicks that hatched and 3 chicks in their eggs. The process of finger painting the chicks can elicit meaningful conversations. Provide students with the opportunity to explain their paintings to a classmate.

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Name _____ Date _____

Draw 7 eggs. Draw lines to show the 7 chicks standing.



Name _____ Date _____

Draw 7 eggs. Draw lines to show the 7 chicks standing.



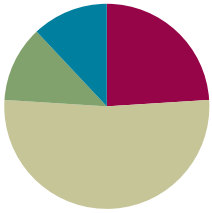
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Lesson 5

Objective: Count 6 objects in array configurations.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Tally 5 with Sticks **PK.CC.3a** (3 minutes)
- Touch and Count Cotton Balls **PK.CC.3a** (3 minutes)

Tally 5 with Sticks (3 minutes)

Materials: (T/S) 5 craft sticks

Note: Throughout Topic A, children line up and count craft sticks as a foundation for tallying numbers to 10.

T: Let's count the fingers on one hand.
S: 1, 2, 3, 4, 5.
T: How many fingers did you count?
S: 5.
T: Let's use one stick to stand for each finger. How many sticks will I need?
S: 5.
T: Count and place your 5 sticks next to each other. Now, let's take the last stick you counted, and put it on the other sticks, like this (demonstrate putting the last stick across like a tally).
S: (Do so.)
T: Mix up your sticks, and count them again. Arrange them the same way! See if you remember how to put the last stick, stick number 5.

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Touch and Count Cotton Balls (3 minutes)

Materials: (S) Baggie with 7 cotton balls

Note: Be specific in feedback to students: "Yesterday, you counted to 5. Today, you counted to 6. You did it quickly and with more confidence!" It is also wise to document progress with counting to show parents during meetings. Take note if students count more effectively with some materials than others.

Repeat the same differentiated counting activity from Lesson 4 with cotton balls.

Application Problem (3 minutes)

Materials: (T) 6 plastic eggs (3 different colors), half dozen egg carton



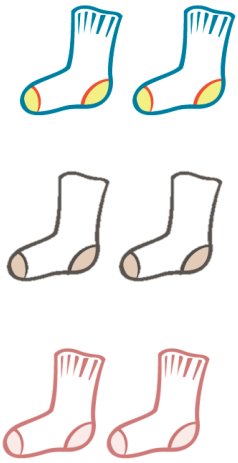
Tell students about a dream in which 3 hens were in a backyard chicken coop. Invite 3 students forward to be the hens. In the dream, each hen had 2 eggs. Hand each "hen" 2 eggs of the same color. Then, instruct them to put their pair of eggs in the carton, next to each other. Invite all children to count how many total eggs the hens laid that week.

Note: This problem is designed for students to practice arranging pairs in an array, with the support of the egg carton, and counting to find the total.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) 3 pairs of clean socks



1. Show students 4 clean socks in a pile. Ask for their help in matching the socks.
2. As children find matches, line up the pairs in an array.
3. Say, "Help me count my clean socks." Point to each sock as children count to 4, moving from left to right, top to bottom. Reinforce that the last number said was the total by asking, "How many clean socks?"
4. Pull out 2 more clean socks. Say, "I found another pair! How many socks are in this pair?" Guide children to see that a pair is 2 socks.
5. Add the socks to the array, as shown to the right. Ask children to count each sock as it is being touched, moving from left to right, top to bottom.
6. Move the socks into a straight line and ask, "How many clean socks?"

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Part 2: Practice

Materials: (S) Problem Set, crayons

Distribute the Problem Set.

1. Invite children to show which socks they will color to make pairs that match. Invite them to count all the socks.
2. Send students to tables with their Problem Sets to color pairs of socks and then color the set that has 6 objects.

Student Debrief (3 minutes)

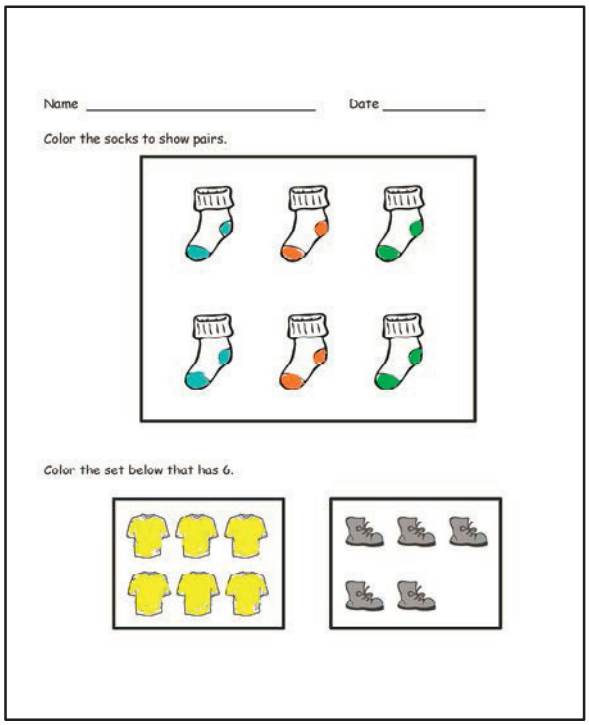
Lesson Objective: Count 6 objects in array configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- How did you know which group to color on your Problem Set? Did you color the shoes? Why not?
- What was the same about the pairs of socks and the shirts? What was different?
- (Arrange 6 socks in a line and 6 socks in a 2 by 3 array.) How many socks are there in each group? Let's count them again!
- (Arrange 5 socks in an array.) Sofie was sad because she counted 5 clean socks after she did the laundry. Why do you think she was sad?


Name _____ Date _____

Color the socks to show pairs.

Color the set below that has 6.

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

Although the teacher models the counting of the socks from left to right and top to bottom, students may arrange and count the objects in a different manner if the student's count is correct. If the student's count is incorrect, have students evaluate their process, and encourage them to count following the teacher's model.

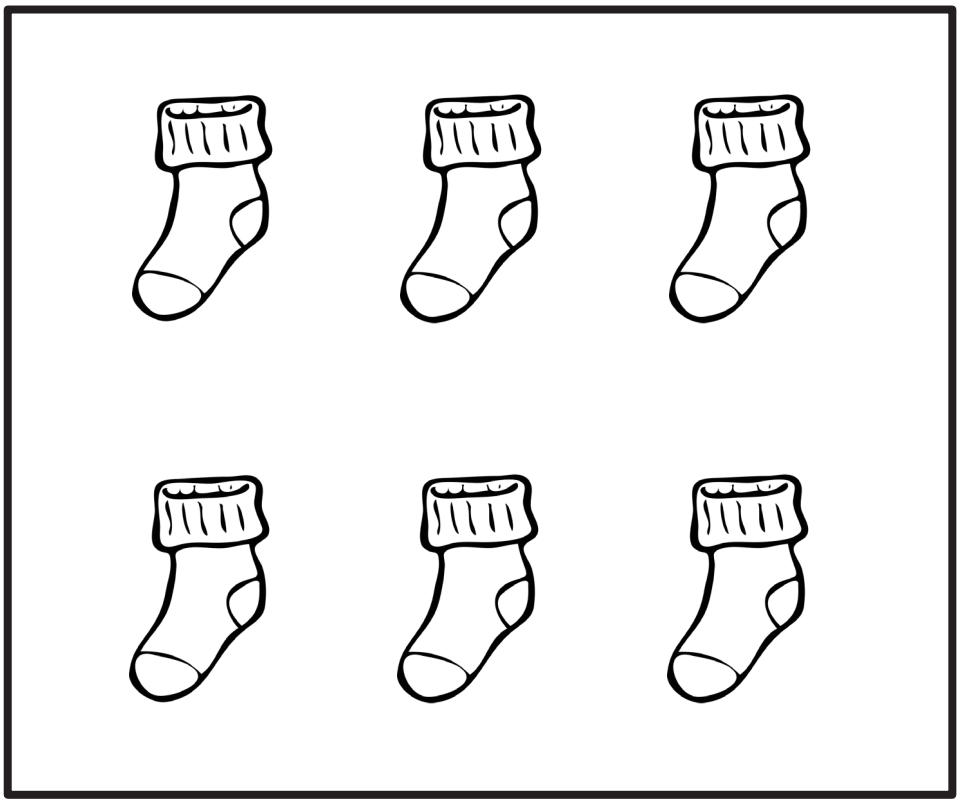
CENTER CONNECTION:

Have children organize socks and other objects that come in pairs within the housekeeping center or the dramatic play center. Children can organize plates and cups for three friends in an array. Alternatively, they can arrange pairs of shoes or gloves in an array and count.

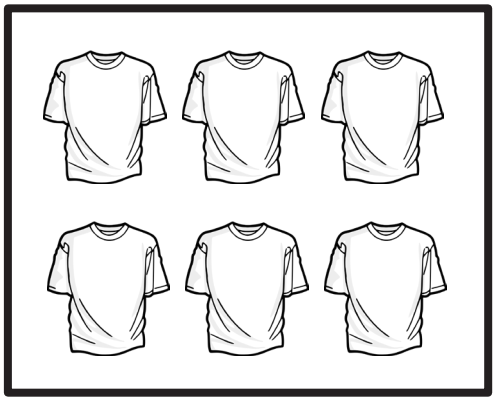
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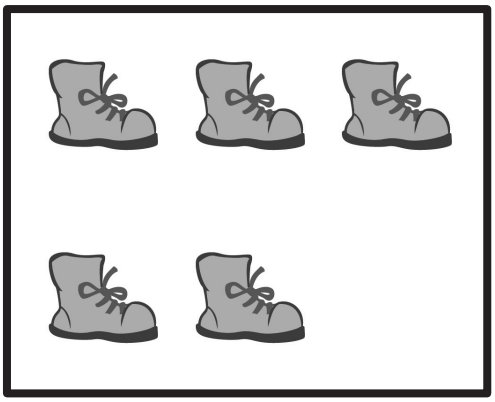
Name _____ Date _____

Color the socks to show pairs.



Color the set below that has 6.





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Topic B

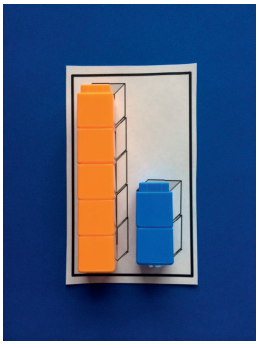
Matching One Numeral with up to 7 Objects

PK.CC.3ab, PK.CC.4

Focus Standards:	PK.CC.3ab	Understand the relationship between numbers and quantities to 10; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
	PK.CC.4	Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects.
Instructional Days:	6	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

In Module 1, children worked within 5, matching a group to the numeral that tells *how many*. Now, in Topic B, they extend this ability to groups of 6 and 7 (**PK.CC.3ab**). Pre-written numerals are introduced in Topic B so that students have plenty of time to touch and count to 7 before matching the count to the abstract numeral.

Lessons 6 and 7 introduce numerals 6 and 7 along with embedded numbers. These embedded numbers are referred to as *partners* or numbers "inside" bigger numbers. Children understand that 6 can be made of two familiar numbers. "We love 4 and 2 and know them so well. When I put these two sticks together we have 1 longer stick. The longer stick has 1, 2, 3, 4, 5, 6. Six cubes!"

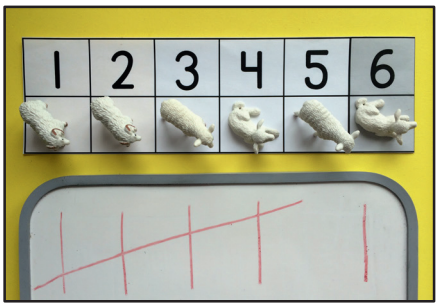


Students practice breaking their sticks (or "towers") into parts to fit inside a puzzle, "I have 5 cubes here and 2 cubes here." As the towers are composed, students are introduced to the numerals. They re-assemble their 6- or 7-sticks from parts and are surprised! Although the puzzles look different, the numeral stays the same when all the cubes are counted.

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In Lesson 8, children count groups of 6 and 7 in circular configurations and match the numeral that tells *how many*. They use objects and pictures to practice this skill. Lesson 9 provides practice counting a group of fish in varied configurations. Students see that the number of fish stays the same regardless of the arrangement (**PK.CC.3b**).

In Module 1, children learned to create groups of sticks to match a numeral up to 5. In Fluency Practice, they have been drawing tally marks to represent quantities up to 5 using their newly developed fine motor skills to make vertical and diagonal lines. In Lesson 10, children extend this to make tally marks to represent quantities to 7. This playful work also revisits the relationship of 7 and 6 to 5.



Lesson 11 asks children to make a group of up to 7 fish after seeing or hearing a number. As in Module 1, students use cards with numerals on one side and dots on the other. This supports children who still need to use matching in order to create a group.

Throughout Topic B, children develop fluency with rote counting through 8, tallying up to 5, and touching and counting up to 7 objects with one-to-one correspondence. The use of engaging materials, movement, and simple games allows children to build both skills and number sense joyfully.

A Teaching Sequence Toward Mastery of Matching One Numeral with up to 7 Objects	
Objective 1:	**Compose 6, and then decompose into two parts. Match to the numeral 6. (Lesson 6)**
Objective 2:	**Compose 7, and then decompose into two parts. Match to the numeral 7. (Lesson 7)**
Objective 3:	**Count 6 and 7 objects in circular configurations. (Lesson 8)**
Objective 4:	**Arrange and count 6 and 7 objects in varied configurations. (Lesson 9)**
Objective 5:	**Tally 6 and 7 objects. (Lesson 10)**
Objective 6:	**Look at a numeral and count out a group of up to 7 objects. (Lesson 11)**

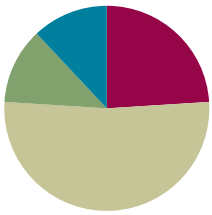
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Lesson 6

Objective: Compose 6, and then decompose into two parts. Match to the numeral 6.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Tally 5 Apples **PK.CC.3a** (3 minutes)
- Count to 7 on Fingers **PK.CC.3a** (3 minutes)

Tally 5 Apples (3 minutes)

Materials: (T) 5 apples (S) paper, crayon

Note: Throughout Topic B, the foundation is being laid for tallying numbers to 10, an important representation as it is used in the classroom but also, more significantly, because it is another way to build Pre-Kindergarten students' understanding of numbers in relationship to 5 and 10.

T: Let's count the apples.
S: 1, 2, 3, 4, 5.
T: How many apples did you count?
S: 5.
T: Let's draw one tally mark to stand for each apple. How many tally marks will I need?
S: 5.
T: Count while I draw. (Demonstrate drawing the last tally across, like was done yesterday.)
S: 1, 2, 3, 4, 5.
T: Now, you try. Count out loud as you draw your tally marks. Try again if you finish early.

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

Hand dominance contributes to tally formations. Students who are right-hand dominant may be more comfortable forming the fifth tally from top left to bottom right, and students who are left-hand dominant may feel more comfortable making the fifth tally from top right to bottom left. Both ways of drawing the tally should be accepted.

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Count to 7 on Fingers (3 minutes)

Note: As with Touch and Count Objects, this activity requires differentiation. Some students need to continue to work on the left hand alone for a while. To avoid stress, gently lead students unable to perform this activity back to counting interesting objects.

T: Let's count to 7 in two different ways with our fingers. First, let's drop our fingers as if we were playing the piano. Ready? (Hover hands above a surface as if about to play a piano. Drop each finger sequentially, starting with the left pinky. Unlike when playing the piano, leave the fingers dropped.)

S: 1, 2, 3, 4, 5, 6, 7.

T: Now, let's start with our hands closed and pop our fingers up. Ready? (Put two fists on a surface, as was done in Topic A.)

S: 1, 2, 3, 4, 5, 6, 7.

T: Practice again! Softly count out loud as you move each finger so I can hear you.

Application Problem (3 minutes)

Materials: (T) 2 cans of tennis balls (each with 3 balls)

T: One morning, the teacher was surprised to find a can of tennis balls on her desk! (Invite a student to place the can of tennis balls on her desk.)

T: How many tennis balls are there? I'll touch while you count!

S: 1, 2, 3.

T: The next morning, the teacher found another can of tennis balls right next to the first can on the desk! (Invite a student to place another can of tennis balls next to the first on the desk.)

T: How many tennis balls are there now? I'll touch while you count!

S: 1, 2, 3, 4, 5, 6.

T: How many cans are there?

S: 2.

T: Do you remember how many balls there are?

S: Yes, 6. → No. I'll count again.

T: Count them for me together while I point. As you count, say, "1 ball, 2 balls." Okay?

S: 1 ball, 2 balls, 3 balls, 4 balls, 5 balls, 6 balls.

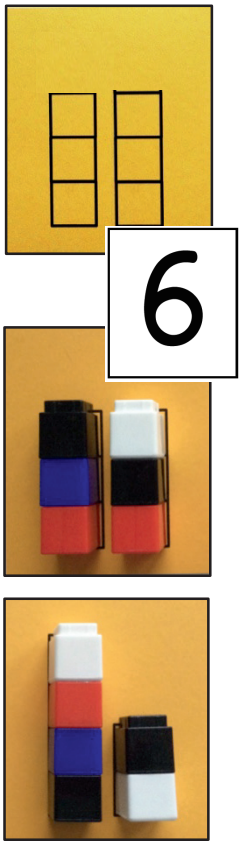
Note: This Application Problem is designed for students to count 6 in an array configuration while also seeing 6 composed of two groups within the story context. By stating the unit at each count, in this case *balls*, students learn a different way to count that carries forward throughout their K–5 experience, with different units (e.g., frogs, centimeters, hundreds, hundredths, quarts, fours, and fourths).

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Concept Development (13 minutes)

Part 1: Concept Introduction

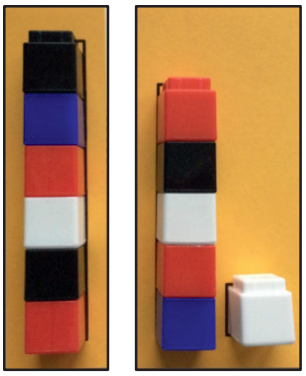
Materials: (T) 10 loose cubes (mixed colors), Partners of 6 Puzzle (4- and 2-stick, Template 1 cut apart) (S) Small resealable bag with 6-stick (mixed colors), 1 Partners of 6 Puzzle (Template 1 cut apart), numeral card 6 (Template 2 cut apart)



1. Place the 10 loose cubes on the floor. Invite two students forward. Tell each student to make a stick of 3 cubes to match a can of tennis balls.
2. Display the puzzle template. Invite students to place their sticks on the matching puzzle spaces.
3. Use self-talk while joining the two sticks. "Three is such a familiar number! We know it so well. I wonder what would happen if I put these two sticks together." Join the sticks, and guide children to see that there is now 1 longer stick. Touch and count the 6 cubes as a class.
4. Introduce the numeral 6 using the numeral card. "This is how we show the number 6. Everyone trace it with your finger in the air." Invite students to share their thoughts about the shape of the number 6 and what it reminds them of.
5. Ask, "Can I break this 6-stick so I have the same two small sticks again?" Invite a student to show and prove that they are the same by placing sticks on the puzzle.
6. Distribute a bag to each student. Invite children to touch and count the cubes in their sticks. Have them use the numeral card to trace 6 with a finger and say "six" as they do so.
7. Have children break their sticks to match their puzzles. Guide them to describe their work as they are able: "I made smaller sticks." "I broke my 6 stick into two parts." "I have some cubes here and some cubes here." "I have 4 cubes here and 2 cubes here; they're partners!" Instruct children to put their sticks back together to form the original stick. Every time they count and make 6 again, have them use the numeral card to trace 6 with a finger.

Part 2: Practice

Materials: (S) 6-stick, Partners of 6 Puzzles (Template 1 cut apart), numeral card 6 (Template 2 cut apart)



Continue to work in the circle so children can easily pass the puzzles.

1. Distribute a new Partners of 6 Puzzle to each child. Demonstrate how to break the stick into two smaller parts to match the puzzle.
2. Give students a chance to break their stick and place it on a puzzle. Guide them to use their words to describe their work as they did in Part 1.

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3. Have children put the parts together again. Guide them to count and tell how many are in their 6-sticks. Each time they make 6 again, have them trace the numeral.
4. Have children pass the puzzle to the right and repeat Steps 2 and 3.

Student Debrief (3 minutes)

Lesson Objective: Compose 6, and then decompose into two parts. Match to the numeral 6.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

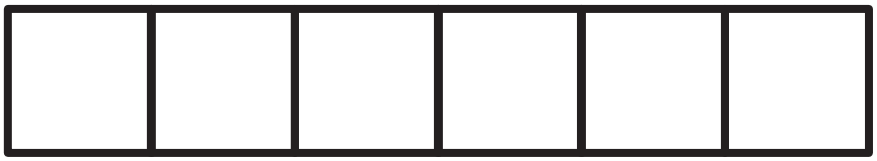
- (Display the numeral 6.) Show me 6 fingers. Wiggle all 6 of them. Now, just wiggle one of them. (Repeat wiggling different numbers of fingers. Let them use their fingers in any way they wish.)
- Can you break your stick to match the total number of tennis balls in both cans (gesture clearly to both cans)? Can you use your fingers to show the total number of balls in both cans?
- (Show numeral card 6 and numeral card 1.) Let's compare the number 6 with the number 1. How do they look different? (If there is time, repeat with 2, 3, and so on.)

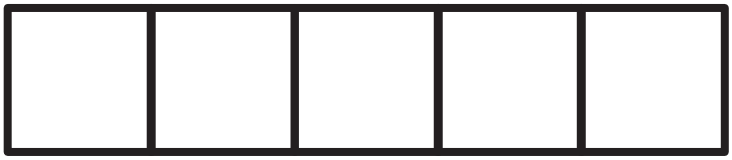
CENTER CONNECTION:

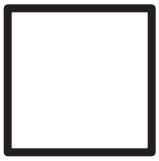
Point out partners of 6 at centers. For example, in the block center, display 6 blocks with two different shapes (e.g., 3 rectangular blocks and 3 cylindrical blocks). Notice aloud that there are 6 blocks. Ask, "How many have rectangles on a side? How many have circles on a side?"

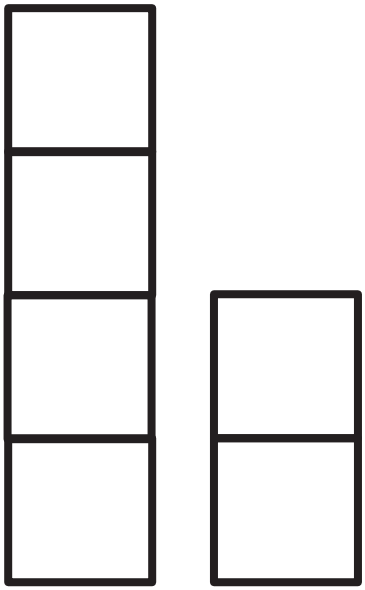
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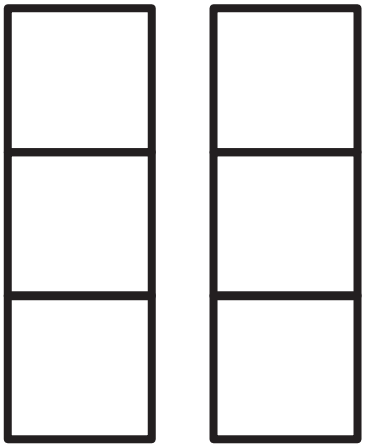
Cut along dashed lines to prepare Partners of 6 Puzzles.







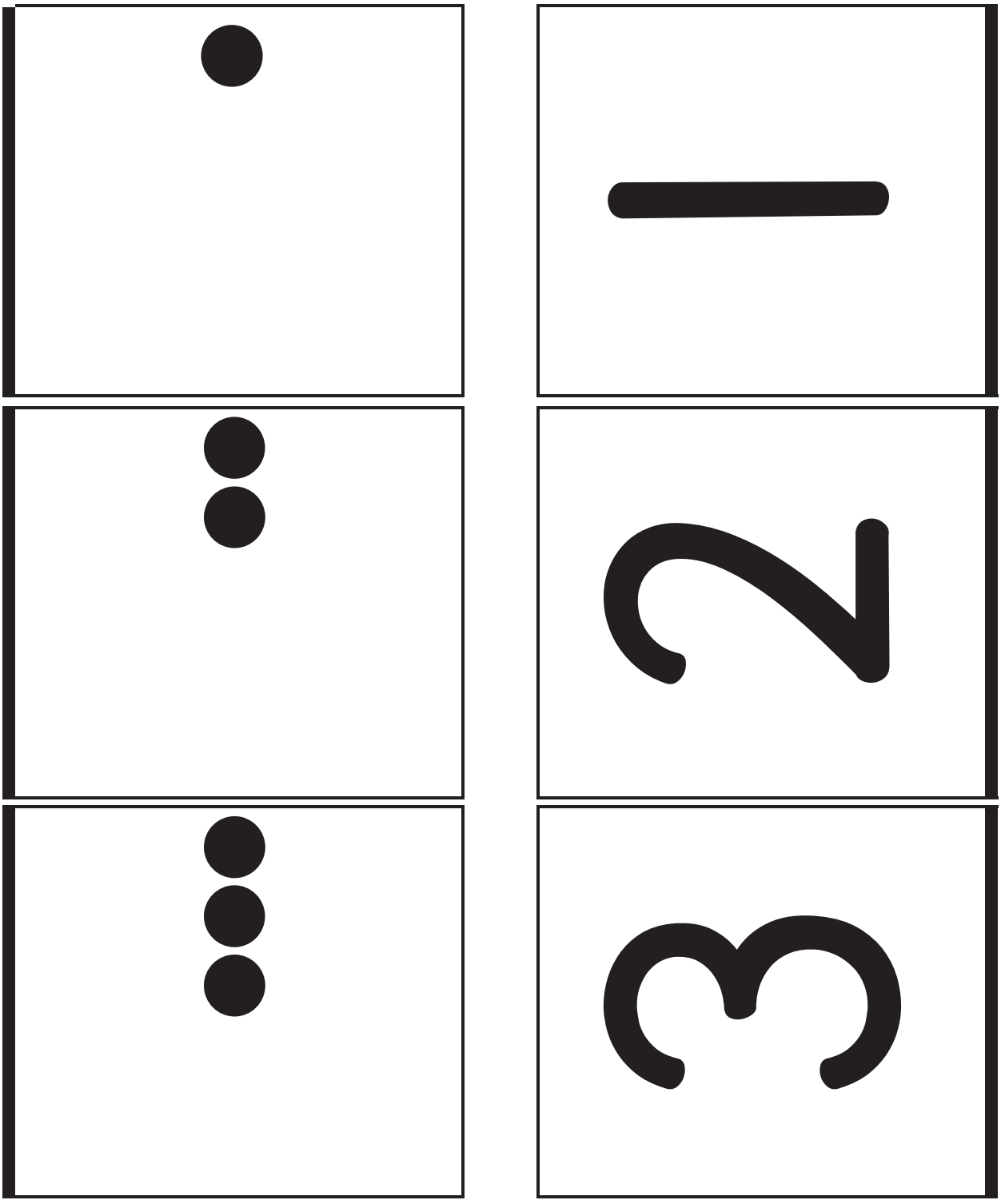




partners of 6 puzzles

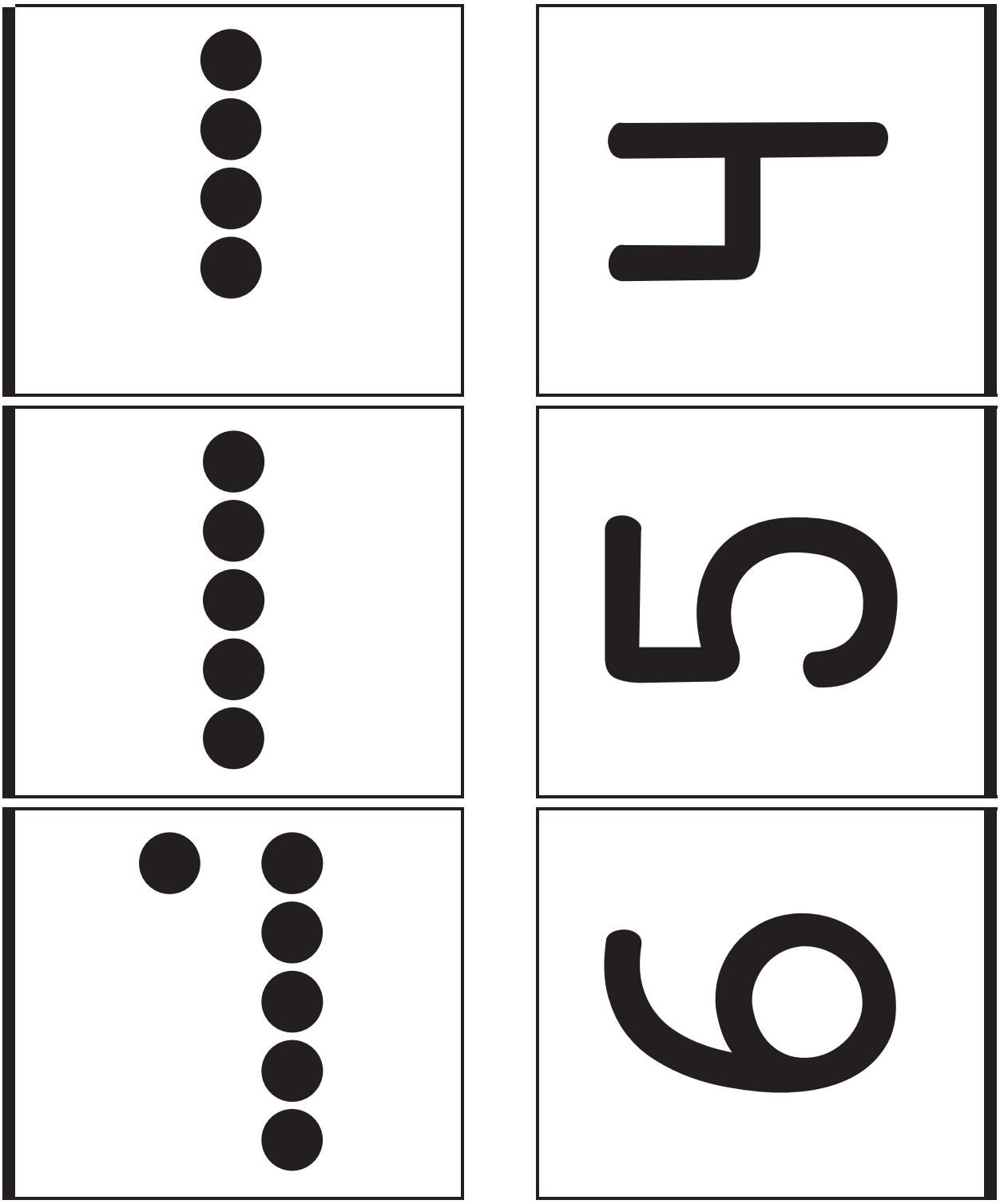
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To create numeral cards: 1) Print. 2) Fold lengthwise so the outline on the numeral side matches the outline on the dot side. 3) While the paper is folded, cut out individual cards. Do not cut along the fold! 4) Laminate with cards folded so that numeral and dots match.



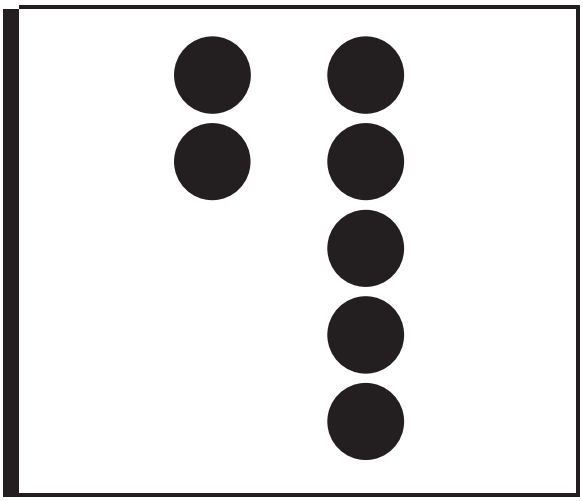
numeral cards (Only 1 and 6 are needed for this lesson. Set aside other cards for use in future lessons.)

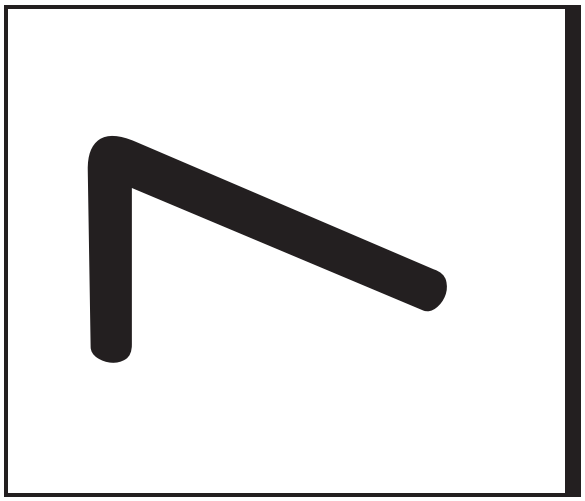
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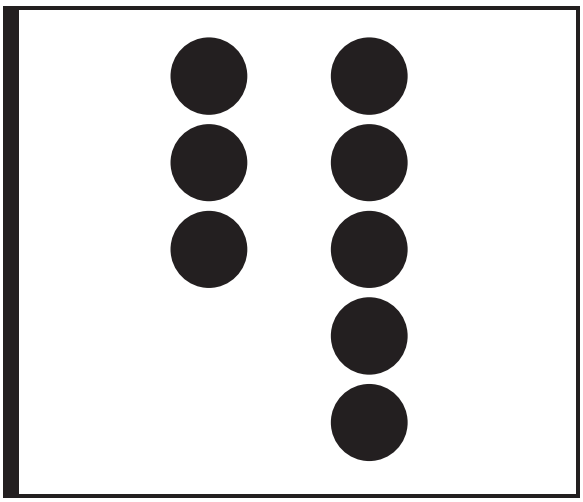


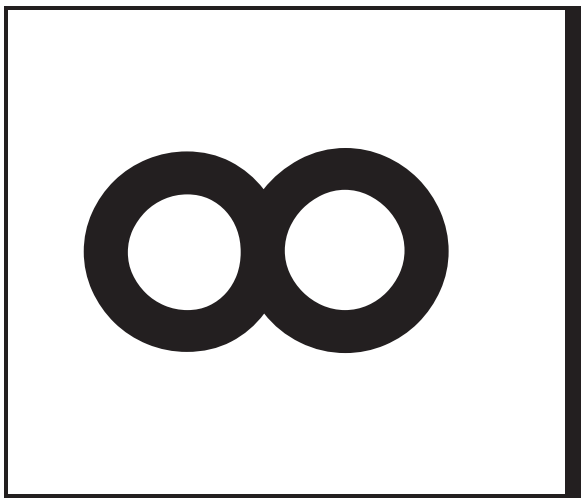
numeral cards

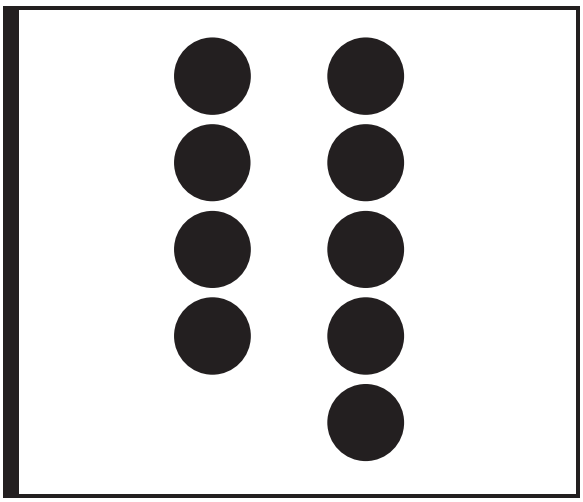
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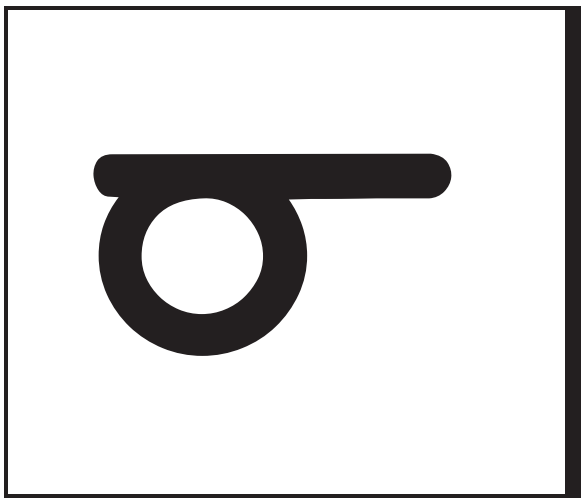






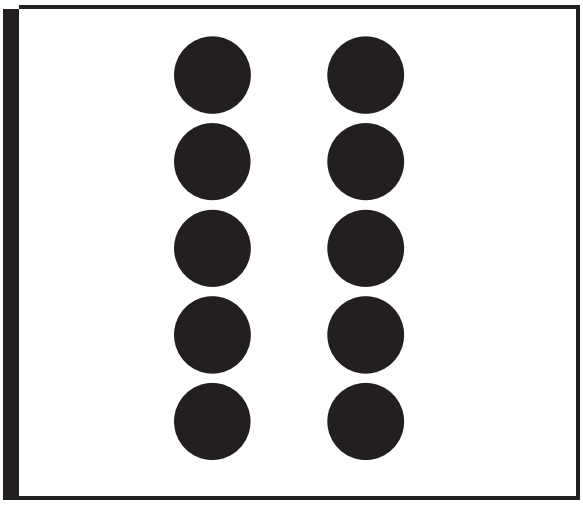


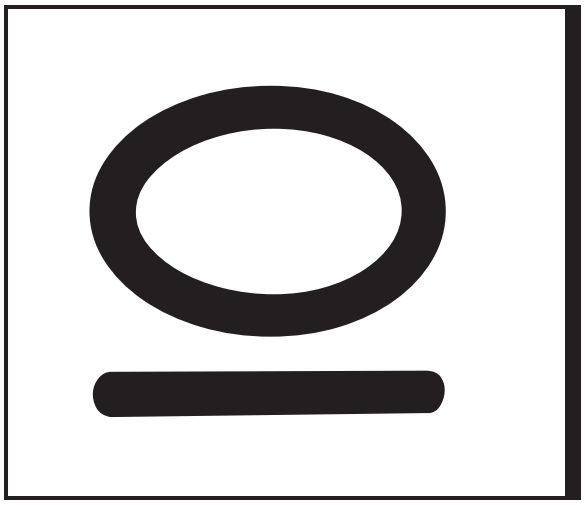


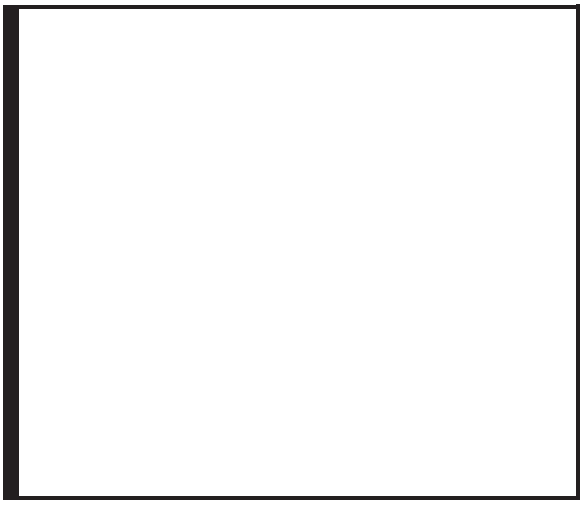


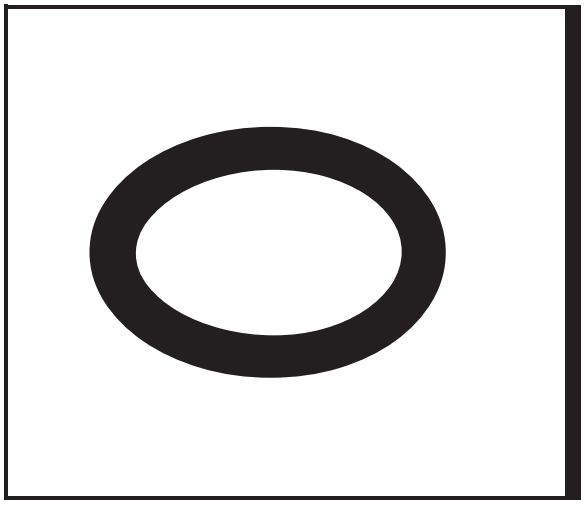
numeral cards

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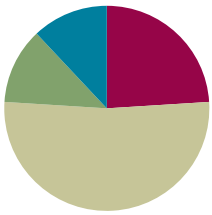
numeral cards

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Lesson 7

Objective: Compose 7, and then decompose into two parts. Match to the numeral 7.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Tally 5 Pine Cones **PK.CC.3a** (3 minutes)
- Build and Break a Stick **PK.CC.3a** (3 minutes)

Tally 5 Pine Cones (3 minutes)

Materials: (T) 5 pine cones (S) Paper, crayon

Note: With practice, students gain confidence. Make specific observations about ways in which their tallying has improved; for example, "Today your tally marks are straighter (the same length, evenly spaced)." Possibly show a student's tally from the day before to compare and celebrate improvement.

Repeat the fluency activity from Lesson 6, tallying pine cones or a different object, something students find interesting. While circulating, use position words such as *next to, beside, on,* and *under.* For example: "I see you drew your tally next to the other one." "Yes, we draw the tally mark for 5 on the others." "Yes, there are 4 tally marks under that tally mark!"

Build and Break a Stick (3 minutes)

Materials: (T) Numeral cards 1–6 (Lesson 6 Template 2) (S) 1 stick of 5 cubes (varied colors), loose cubes

Note: This fluency activity allows students to have another experience of composition (putting together) and decomposition (breaking apart). Some students may be ready to count the cubes in each part; others may be at the level of simply noting that the bigger tower can be broken into two smaller parts. Encourage each child to his or her highest level with sensitivity.

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T: Touch and count the cubes of your stick. (Pause to allow for student response.) Now, let me hear you counting as you build!

S: 1, 2, 3, 4, 5.

T: Now, add 1 more!

T: Touch and count the cubes of your stick now. (Pause to allow for student response.) Now, let me hear you counting as you build!

S: 1, 2, 3, 4, 5, 6.

T: Break your stick apart in different ways, and then put it back together again. (Circulate and provide support as students work.) How many cubes are in your stick when you put it back together?

Have students break their sticks again in a different way. Show them the numerals from 1 to 6. Ask them which shows the number 6.

Application Problem (3 minutes)

Materials: (T) Class calendar

T: Count the number of days in a week on our calendar for me. I'll touch. You count.

S: 1, 2, 3, 4, 5, 6, 7.

T: How many days are there in one row?

S: 7.

T: Does anyone know what days we don't come to school?

S: Saturday and Sunday.

T: I'll cross them off. Count those days for me. I'll cross off. You count.

S: 1, 2.

T: Count the number of days we usually go to school for me. I'll touch. You count.

S: 1, 2, 3, 4, 5.

T: Count the number of days in a whole week again!

S: 1, 2, 3, 4, 5, 6, 7.

Note: Young students are becoming aware of time as they begin to attend school. The number 7 is often associated with number of days in a week. This brief counting activity simply begins to activate that awareness without the complexity of analysis. Note that the teacher's voice is omitted from the count. This is done to encourage student leadership in counting. Possibly have a student or set of students model counting while the teacher or someone else touches to heighten student awareness that these two skills must come together.

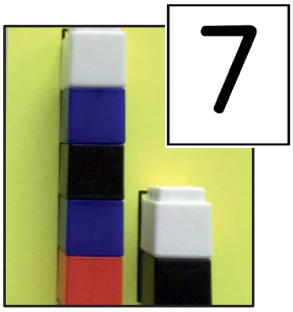
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Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) 10 loose cubes (mixed colors), Partners of 7 Puzzle (5- and 2-stick, Template)
(S) Small resealable bag with 7-stick (mixed colors), 1 Partners of 7 Puzzle (Template cut apart), numeral card 7 (Lesson 6 Template 2)

1. Place the 10 loose cubes on the floor. Invite two students forward. Tell one student to make a stick of 5 cubes and the other to make a stick of 2 cubes.
2. Display the 5- and 2-stick puzzle. Invite students to place their sticks on the matching puzzle places.
3. Use self-talk while joining the two sticks, "Those are such familiar numbers, and we just saw them in the calendar, too! We love 5 and 2 and know them so well that they are like good friends. I wonder what would happen if I put these two sticks together?" Just as in Lesson 6, guide children to see that there is now 1 longer stick. Count the 7 cubes as a class.
4. Introduce the numeral 7. Say, "This is how we show the number 7. Everyone, trace it with your finger in the air." Invite students to share thoughts about its shape and what it reminds them of.



5. Ask, "Can I break this 7-stick so I have the same two small sticks again?" Invite a student to show and prove that they are the same by placing sticks on the puzzle.
6. Distribute a bag to each student. Invite children to touch and count the cubes in their sticks. Have them use the numeral card to trace 7 with a finger and say "seven" as they do so.
7. Have children break their sticks to match their puzzles. Guide them to describe their work as they are able: "I made smaller sticks." "I broke my 7 stick." "I made two parts." "I have some cubes here and some cubes here." "I have 4 cubes here and 3 cubes here. It's like they are partners." Instruct children to put their sticks back together to form the original stick. Every time they count and make 7 again, have them use the numeral card to trace 7 with a finger.

MP.2

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

As students are verbalizing their actions, call attention to students who are making attempts to use their own words to explain composing and decomposing 7. Encourage English language learners to say the numbers in their native language. Having students model language both encourages persistence and celebrates success.

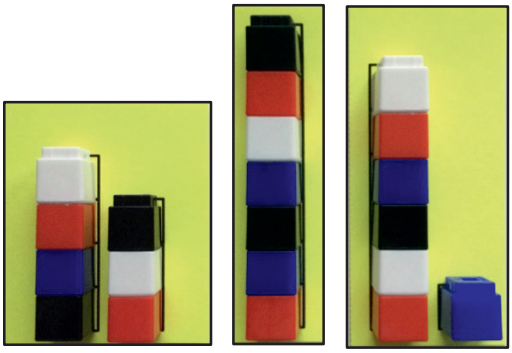
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Part 2: Practice

Materials: (S) 7-stick, Partners of 7 Puzzles (Template cut apart), numeral card 7 (Lesson 6 Template 2)

Continue to work in the circle so children can easily pass the puzzles.

1. Distribute a new Partners of 7 Puzzle to each child. Demonstrate how to break the stick into two parts to match the puzzle.
2. Give students a chance to break their stick and place it on a puzzle. Guide them to use their words to describe their work as they did in Part 1.
3. Have children put the parts together again. Guide them to count and tell how many are in their 7-stick. Each time they make 7 again, have them trace the numeral.
4. Have children pass the puzzle to the right, and repeat Steps 2 and 3.



Student Debrief (3 minutes)

Lesson Objective: Compose 7, and then decompose into two parts. Match to the numeral 7.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Show me 7 fingers. Wiggle all 7 fingers. Wiggle just 2 of your fingers. (Repeat wiggling different numbers of fingers. Let students use their fingers in any way they wish.)
- (Show Partners of 7 Puzzles.) What was the same about all of your puzzles today?
- (Show a stick of 7.) How many are in this stick? (Break the 7-stick into two smaller sticks. Then, put it back together.) How many are in this one stick? Do we have to count?

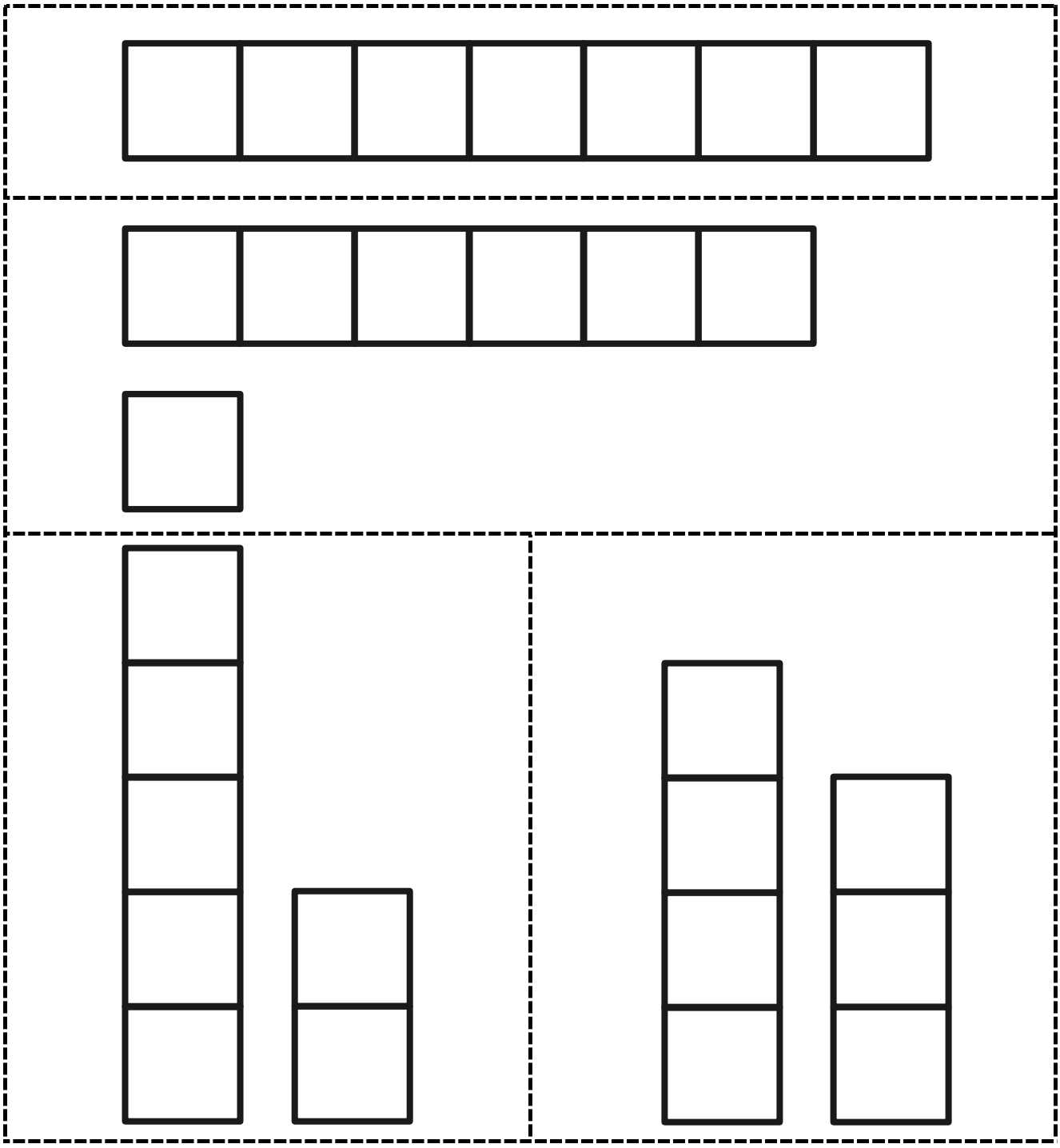
  (Show numeral card 7 and numeral card 6.) Let's compare the number 7 with the number 6. How do they look the same? How do they look different? (Repeat with 1, 2, 3, and so on.)

CENTER CONNECTION:

Add the Partners of 7 Puzzles to the block or puzzle center. Create puzzles for numbers 3, 4, 5, and 6 to add variety. Use a coding system so children are able to find the puzzles that go with each number (e.g., all Partners of 7 Puzzles on yellow paper).

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Cut along dashed lines to prepare Partners of 7 Puzzles.



partners of 7 puzzles

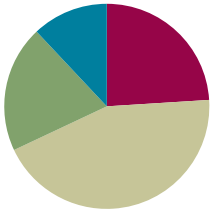
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Lesson 8

Objective: Count 6 and 7 objects in circular configurations.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(5 minutes)
Concept Development	(11 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Count to 8 **PK.CC.3a** (2 minutes)
- Build and Break a Stick **PK.CC.3a** (4 minutes)

Count to 8 (2 minutes)

Materials: (T/S) Plastic or metal lid (drum), 2 sticks (drum sticks)

Note: This fluency activity anticipates the work of Topic C by preparing students to count to 8 by rote so they are ready to count with one-to-one correspondence. By drawing out the "fiiiiive," students start to see the relationship of 6, 7, and 8 to 5.

T: Let's play and count to 6. Join in when you are ready. 1, 2, 3, 4, fiiiive, 6. (Repeat the count until all are playing.)

T: Now, let's play and count to 7. Join in when you are ready. 1, 2, 3, 4, fiiiive, 6, 7. (Repeat until all are playing.)

T: Now, let's play and count to 8. Join in when you are ready. 1, 2, 3, 4, fiiiive, 6, 7, 8. (Repeat until all are playing.)

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Daily counting practice strengthens memory. Students also benefit from connecting counting to a movement activity. Repeat this fluency activity with movements such as hopping or marching.

Build and Break a Stick (4 minutes)

Materials: (S) 1 stick of 5 cubes, loose cubes

Note: Note that this fluency activity, just as in Lesson 7, asks students to build their stick of 7 cubes starting with 5 and putting first 1 more to make 6 and then 1 more to make 7. When they break their sticks, encourage students to see the familiar numbers inside 7. Say, "Look, when you broke your stick, you made a little one! How many cubes are in that one?"

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Application Problem (5 minutes)

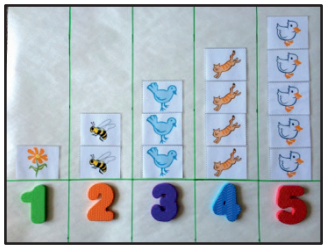
Materials: (T) 1–5 white board or poster from Module 1 Lesson 22, 6 squirrels and 7 bears (Template 1), magnetic numerals 1–7

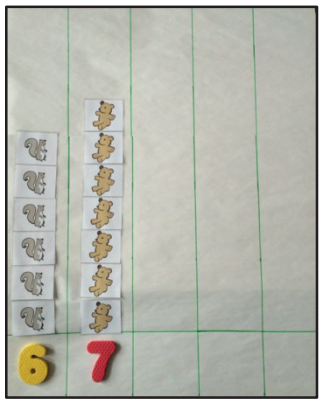
Gather children in a circle. Say the following rhyme, gesturing to each object on the chart:

One little flower, 2 little bees,
3 little birds in a tree.
Nice, warm sun shines down on me.
I can count! 1, 2, 3.

Four little kittens come out to play,
On this warm and sunny day.
Five little ducks take a dive.
Count them: 1, 2, 3, 4, 5.

Six little squirrels, quick as can be,
Climbing up the old oak tree.
In its shade sit 7 chairs,
1, 2, 3, 4, 5, 6, 7 bears.

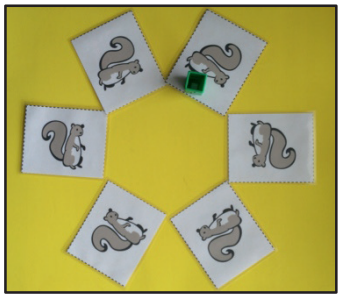




Pass out the magnetic numerals 1–7. Ask, for each number, "Who has the number to show how many flowers there are? How many bees?" continuing up to "How many bears?" Have students put the magnetic numerals on the chart to match. Say, "Clap when I point to the number 6." Point to each number in order from 1. Prior to clapping, students should be completely silent to encourage "internal" counting. Repeat with 7.

Note: In Topics C, E, and G, numbers 8–10 are added to this chart. Select a white board that can be used for this purpose for several days, and leave space on the right side for the additions. Alternatively, use chart paper and objects and numerals with tape on the back.

Concept Development (11 minutes)



Part 1: Concept Introduction

Materials: (T) Magnetic numerals 6–7, objects (e.g., 6 squirrels and 7 bears), 1 linking cube

Use the magnetic numerals and object images from the Application Problem.

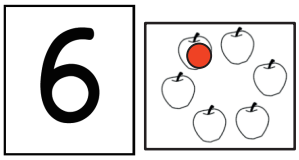
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1. Take the squirrels off the board, and put them in a circle. Say, "The squirrels are having a tea party. Let's count how many squirrels are at the party." Touch and count each squirrel. Instead of stopping at 6, continue around the circle until students notice a problem.
2. Ask students for ideas about how to count things in a circle. Support them as they remember how to mark the start. Repeat the count, pretending the linking cube is a teacup to mark the start of the count.
3. Say, "Point to the number that shows how many squirrels are at the tea party." Ask them, "This number? This number?"
4. Repeat Steps 1–3 with 7 bears.

Part 2: Practice

Materials: (S) Per pair: Numeral cards 5–7 (Lesson 6 Template 2), baggies containing circular configuration cards (Template 2 cut apart), sticker or linking cube (to mark start)

1. Match students with a partner and tell them, "Let's play school! One of you will be the teacher, and one of you will be the student."
2. Say, "Teachers, pick a bag and choose a card. Ask your student how many things are in the circle."
3. After students have done so, say, "Teachers, find the number that matches."
4. Students switch roles, repeating Steps 2–4.
5. Circulate among groups, and provide support as necessary. In particular, watch to see if students are marking a starting point for the count and if they realize the marked card is the first object counted and does not get recounted at the end of the count.



Student Debrief (3 minutes)

Lesson Objective: Count 6 and 7 objects in circular configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

CENTER CONNECTION:

Invite children to help set up a pizza party for 6 or 7 stuffed animals in the dramatic play center. Place the stuffed animals in a circle, and provide cups, plates, and napkins. Have children count the animals, cups, and so on as they are laid out in the circle. Assist them in marking the starting point of their count if needed.

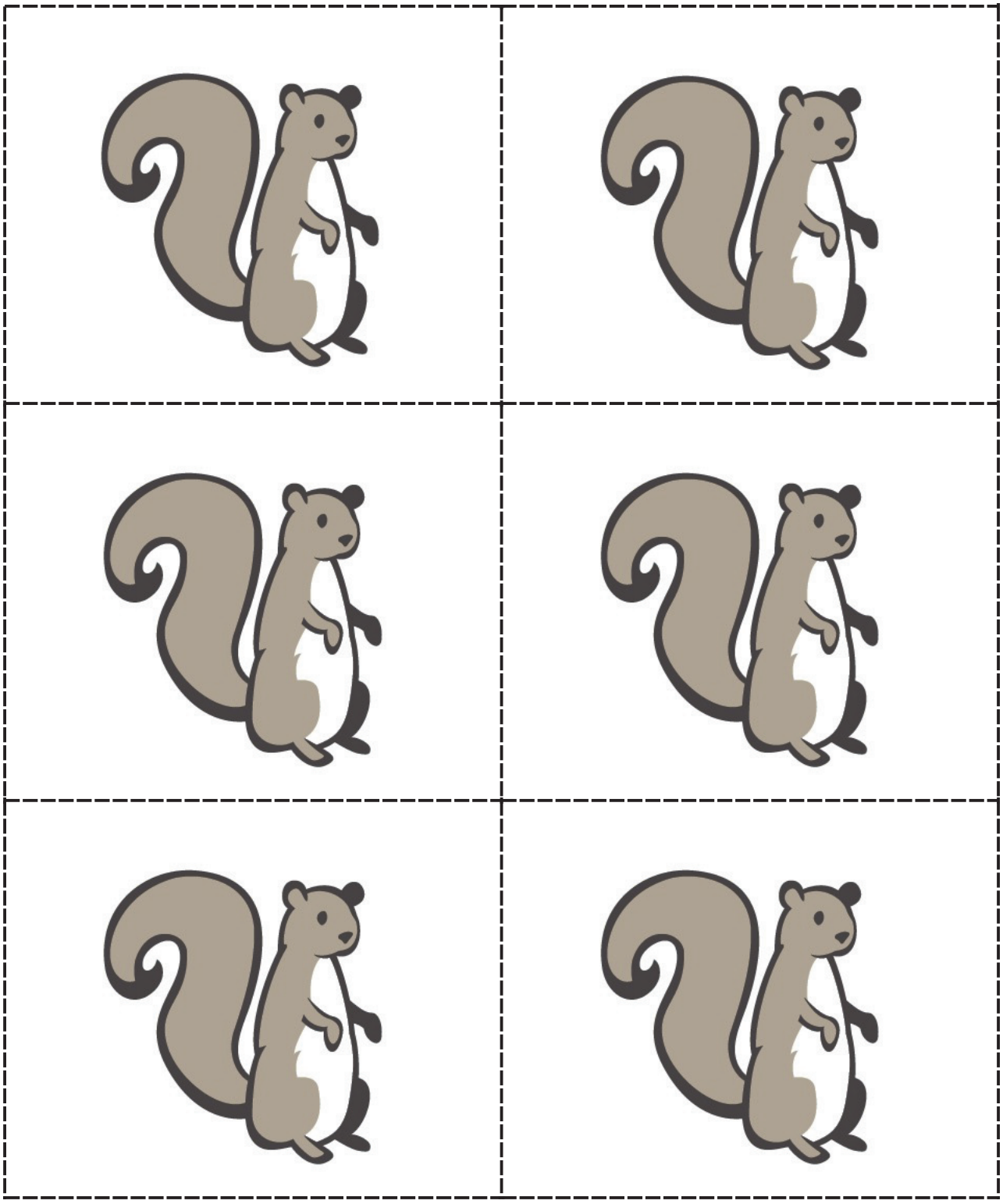
Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

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Note: Have children bring their circular configuration cards to the Student Debrief.

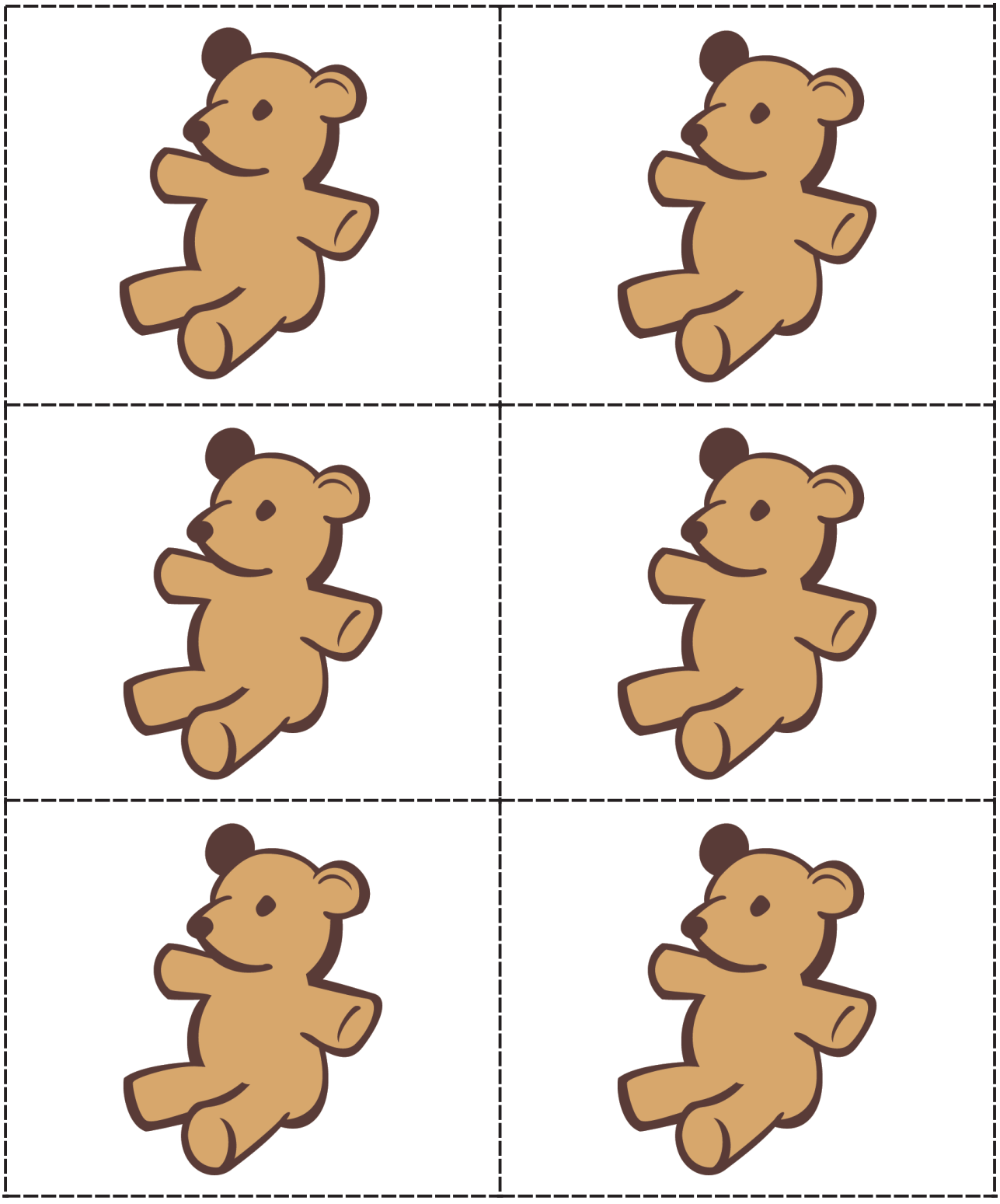
- When counting objects in a circle, how did you know where to stop counting?
- Show me the card with strawberries. Tell your neighbor how many strawberries are on the card. Did your neighbor start counting in the same place?
- Draw or display 6 or 7 objects in a circle. (Display numerals 1–7 on the carpet.) Which number tells how many objects I have? (Pause, as students need time to count.)
- (Write the numeral 6 or 7 on the board, or hold up the foam numerals 6 or 7.) Show me this number on your fingers. (Call a student forward to trace the numeral with her finger. Have the other students trace it in the air with the student.) What does the number look like to you?

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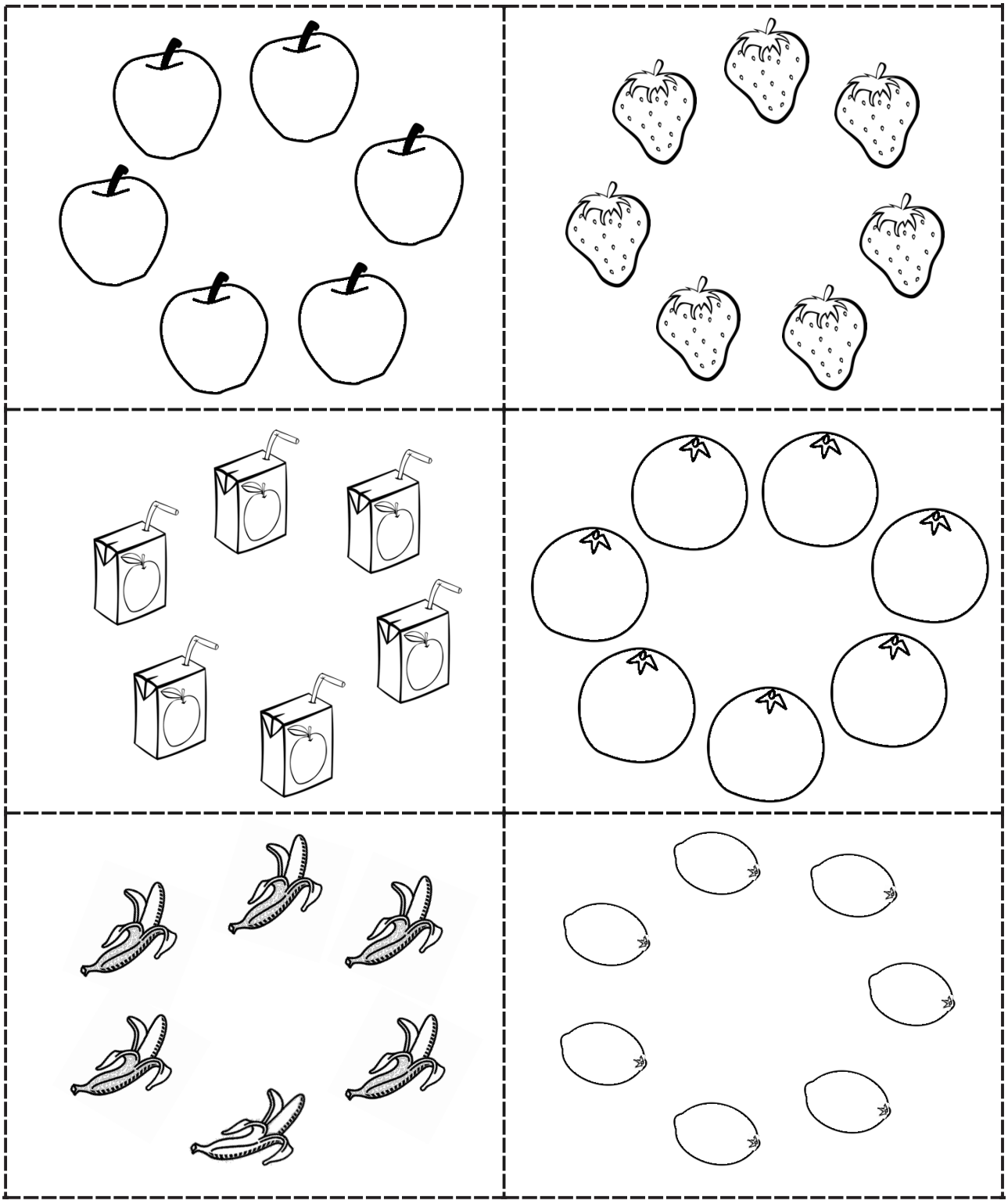
6 squirrels and 7 bears

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6 squirrels and 7 bears

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circular configuration cards

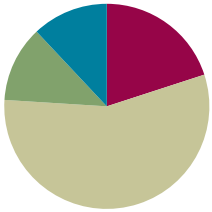
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Lesson 9

Objective: Arrange and count 6 and 7 objects in varied configurations.

Suggested Lesson Structure

Fluency Practice	(5 minutes)
Application Problem	(3 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (5 minutes)

- Clap, Stomp, and Count to 8 **PK.CC.1** (2 minutes)
- Touch and Count to 7 **PK.CC.3a** (3 minutes)

Clap, Stomp, and Count to 8 (2 minutes)

Note: Rote counting to 7 and 8 prepares students for the upcoming objective of touching and counting to 8 in Topic C.

T: Let's clap 7 times and count our claps! Join in when you are ready. 1, 2, 3, 4, 5, 6, 7. (Repeat until most are either clapping, counting, or ideally, clapping and counting. Pause between counts.)

T: Let's stomp 7 times and count our stomps! 1, 2, 3, 4, 5, 6, 7. (Follow the same process as above.)

T: Let's clap 8 times and count our claps! 1, 2, 3, 4, 5, 6, 7, 8.

T: Let's stomp 8 times and count our stomps! 1, 2, 3, 4, 5, 6, 7, 8.

Touch and Count to 7 (3 minutes)

Materials: (S) 7-stick (5 cubes one color, 2 cubes another color)

Note: This fluency activity focuses on counting to 7 in anticipation of introducing the number 8 as 7 and 1 more in Topic C. By using the color change after the fifth cube, the number 7 becomes more accessible, comprised of two familiar numbers, although in this activity the composition of those parts is not analyzed as students simply count past the color change to 7.

T: Stand your stick up to make a tower like this. (Demonstrate 5 on the bottom and the 2 at the top.) Start at the bottom to touch and count the number of cubes in your stick.

S: 1, 2, 3, 4, 5, 6, 7.

T: This time, when you count, use a whisper voice for the bottom color and a big voice for the top color.

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S: (Use whisper voice) 1, 2, 3, 4, 5, (change to big voice) 6, 7.
T: Good. Now, use a big voice for the bottom color and whisper voice for the top color.
S: (Use big voice) 1, 2, 3, 4, 5, (change to whisper voice) 6, 7.
T: This time, use a growling voice for the bottom color and a high voice for the top color.
S: (Use growling voice) 1, 2, 3, 4, 5, (change to high voice) 6, 7.

Have students use a high voice for the bottom color and a growling voice for the top color.

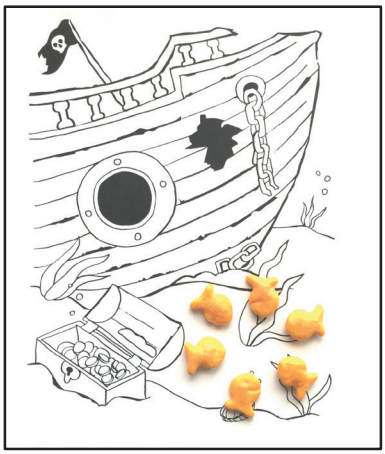
Application Problem (3 minutes)

Materials: (S) Paper plate, 7-stick from Touch and Count to 7

Instruct students to pretend each cube in their 7-stick is a friend waiting in line to go on a merry-go-round. Have them move their friends from the line onto the merry-go-round (the paper plate), and then count their friends. Direct them to gently turn their plates as the merry-go-round starts to move. After directing them to stop the spinning, have them put the friends in a line again and recount.

Note: This fluency activity gives students additional practice counting in a circular formation. The color change may make it easier for them: "I started with the red cube that is next to a yellow one, so I'll stop counting when I get back there." However, they still must determine whether to include the cube they started with in the count. Take note of this possible point of confusion. There are 7 cubes, not 8.

Concept Development (14 minutes)



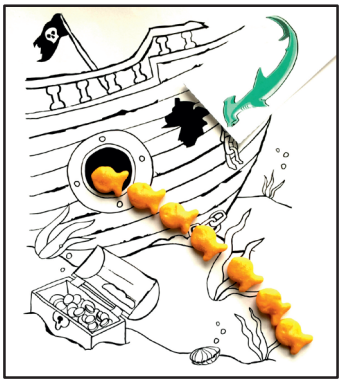
Part 1: Concept Introduction

Materials: (T/S) Underwater mat (Template 1), small cup with 7 goldfish crackers (provide substitute for children with allergy or dietary restrictions), plastic shark (or see sharks on Template 2)

1. Gather students in a circle, and distribute a cup of goldfish crackers and an underwater mat to each child. Have students count out 5 goldfish and place them in a circular configuration on their mats.
2. Describe what they are seeing using self-talk: "The 5 fish are swimming in a circle. One more fish joins their circle. How many fish are in the circle now?" Elicit ideas about how to mark the starting point of the count, and lead students in counting, "1, 2, 3, 4, 5, 6."
3. MP.4 Say, "Oh no, a shark is coming! These fish need to line up so they can swim through this little window to get away from the shark." Ask students, "What should the fish do: line up, or swim in a circle?" Students respond, "Line up!"
4. Line up the fish (as students do the same), and lead the class in a choral count to 6 again. Guide students to see that no fish were eaten by the shark, thank goodness. There are still 6 fish, just arranged differently.

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5. Say, “Phew! The fish hid safely from the shark.” Ask, “Do you know fish swim in schools, large groups just like us? Let’s pair up the fish in our school. How many fish are there?” (Guide students to count fish in the array configuration.)
6. Say, “The fish found 1 more friend inside the pirate ship. (Show how he doesn’t have a buddy.) Since he doesn’t have a buddy, the fish decide to swim in a circle again.” Ask students, “How many fish are swimming?” Count to 7 chorally, and guide students to answer in a complete sentence: “There are…” MP.4
7. Say, “That sneaky shark is back! Let’s have the fish line up quickly!” Model as students move the fish into a line and recount to 7.



Part 2: Practice

Materials: (S) Per pair: small resealable bag with 6–7 picture cards (Template 3), numeral cards 5–7 (optional, Lesson 6 Template 2)

1. Pair students, and send them to tables with a bag of 6–7 picture cards.
2. Say, “Look at the picture cards in front of you. What do you see?” Students might respond: “I see kitties in a circle.” “I see these kitties have buddies.” “The kitties are in a line for a drink of water.”
3. Instruct partners to take turns asking a *how many* question and counting the objects in the pictures. If students need an extra challenge, have them find the matching numeral.
4. As students work, circulate and describe what they are doing using parallel talk: “Aravinder touched and counted 7 bees in a circle. Then, she counted 7 in a straight line.”

Student Debrief (3 minutes)

Lesson Objective: Arrange and count 6 and 7 objects in varied configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child’s progress toward meeting the lesson objective.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Provide real life opportunities for students to practice counting in a variety of configurations throughout the day. For example, arrange students in a circle, and then line them up during a classroom transition. This continued real life practice allows students to discover patterns and see the configurations (array, linear, and circular) within their daily routines.

CENTER CONNECTION:

Practice counting up to 7 in different configurations in the block center. Select 6 or 7 blocks, have children playfully mix them up, and count how many. Then, ask the children to line up the blocks and count again. Finally, ask them to stack the blocks and count. Some students use conservation to understand that the number of blocks does not change when the blocks are rearranged.

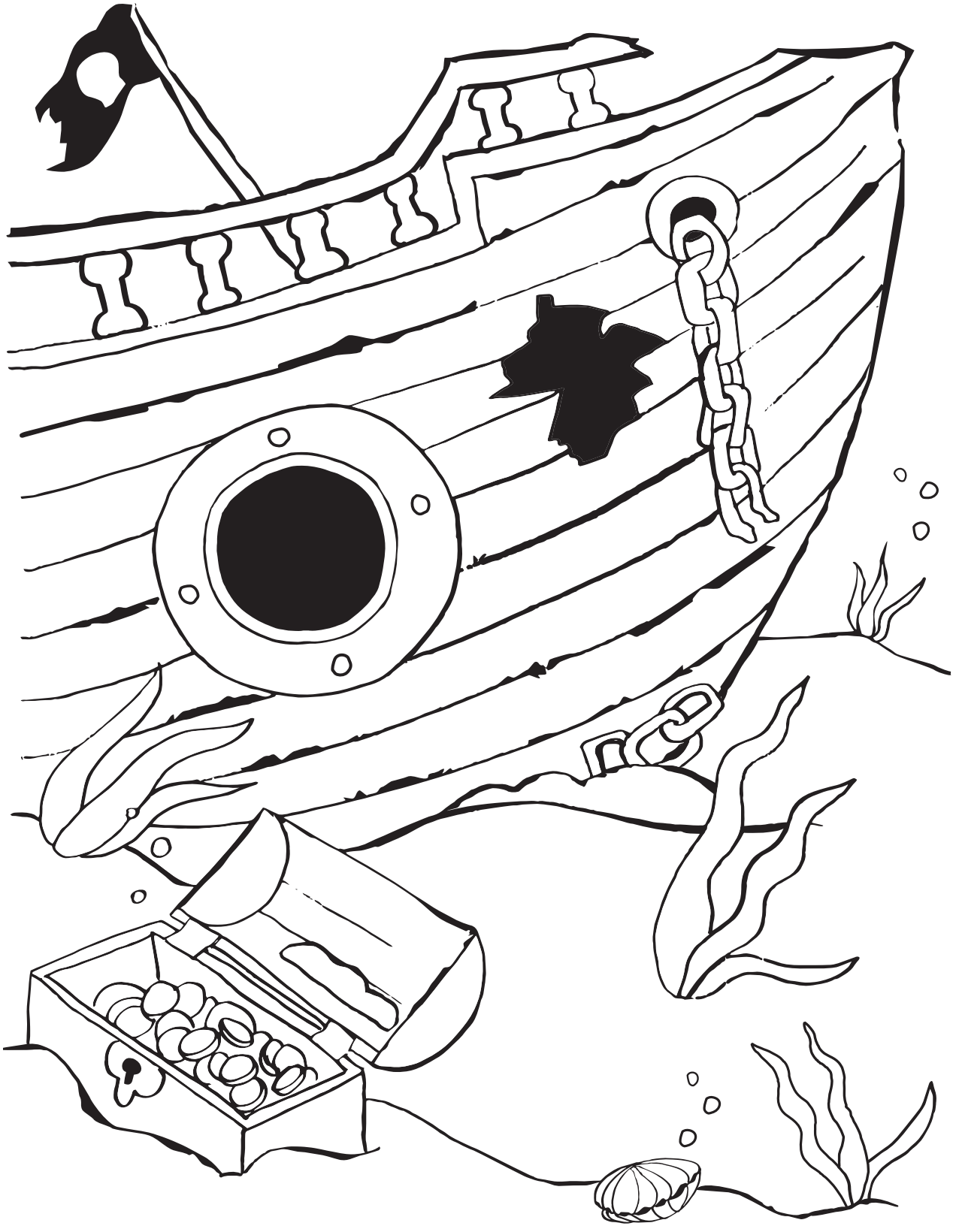
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As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

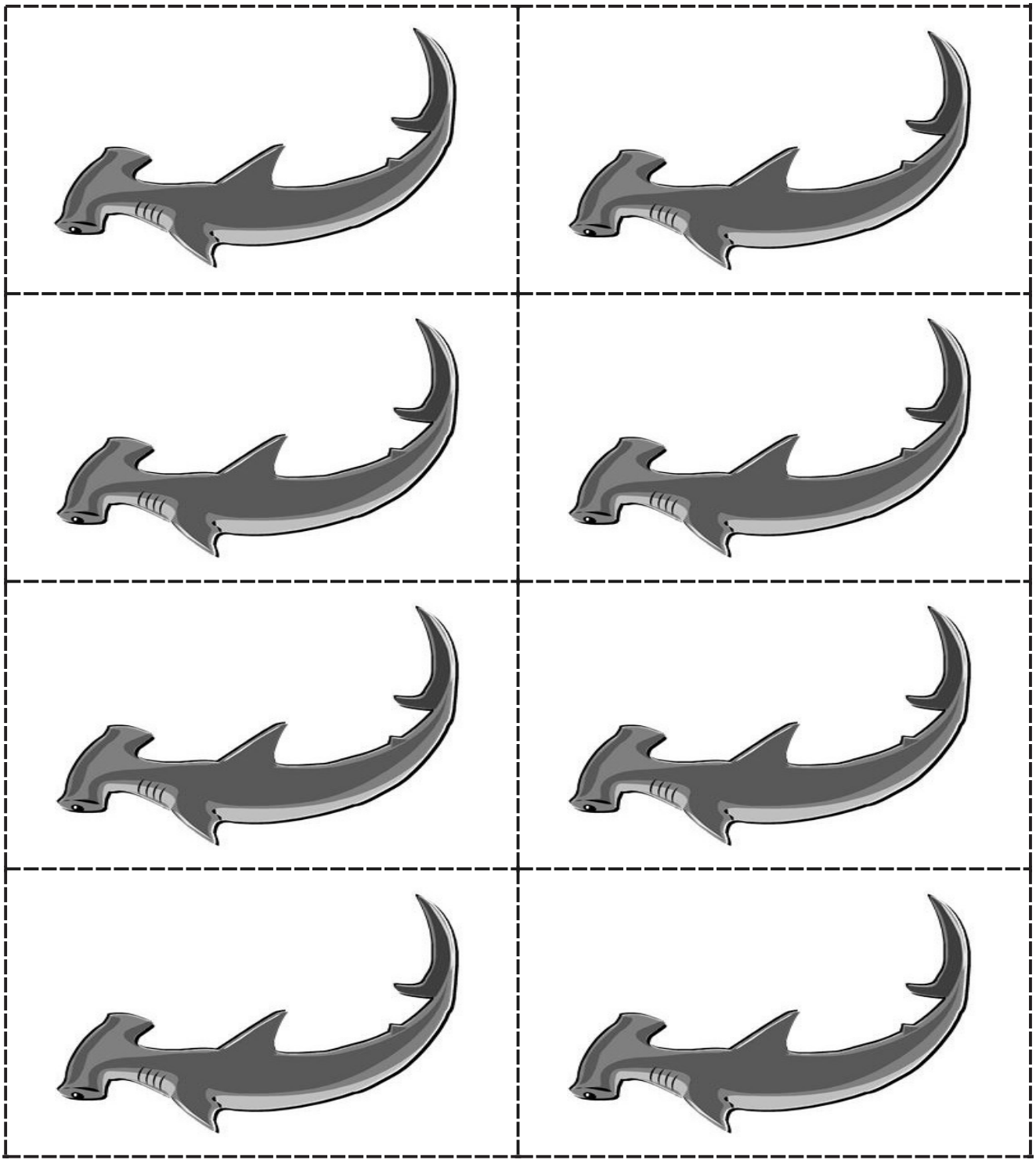
- Which is harder for you, counting when the fish are in a circle or when they are in a line? Why?
- If we moved from our circle on the carpet and made a line for lunch, would we still have the same number of children? What if we moved to work at our desks? How do you know? (Accept answers that notice that sometimes some children might be out of the classroom or elsewhere.)
- Do you like counting to 7? What do like about the number 6? The number 7?

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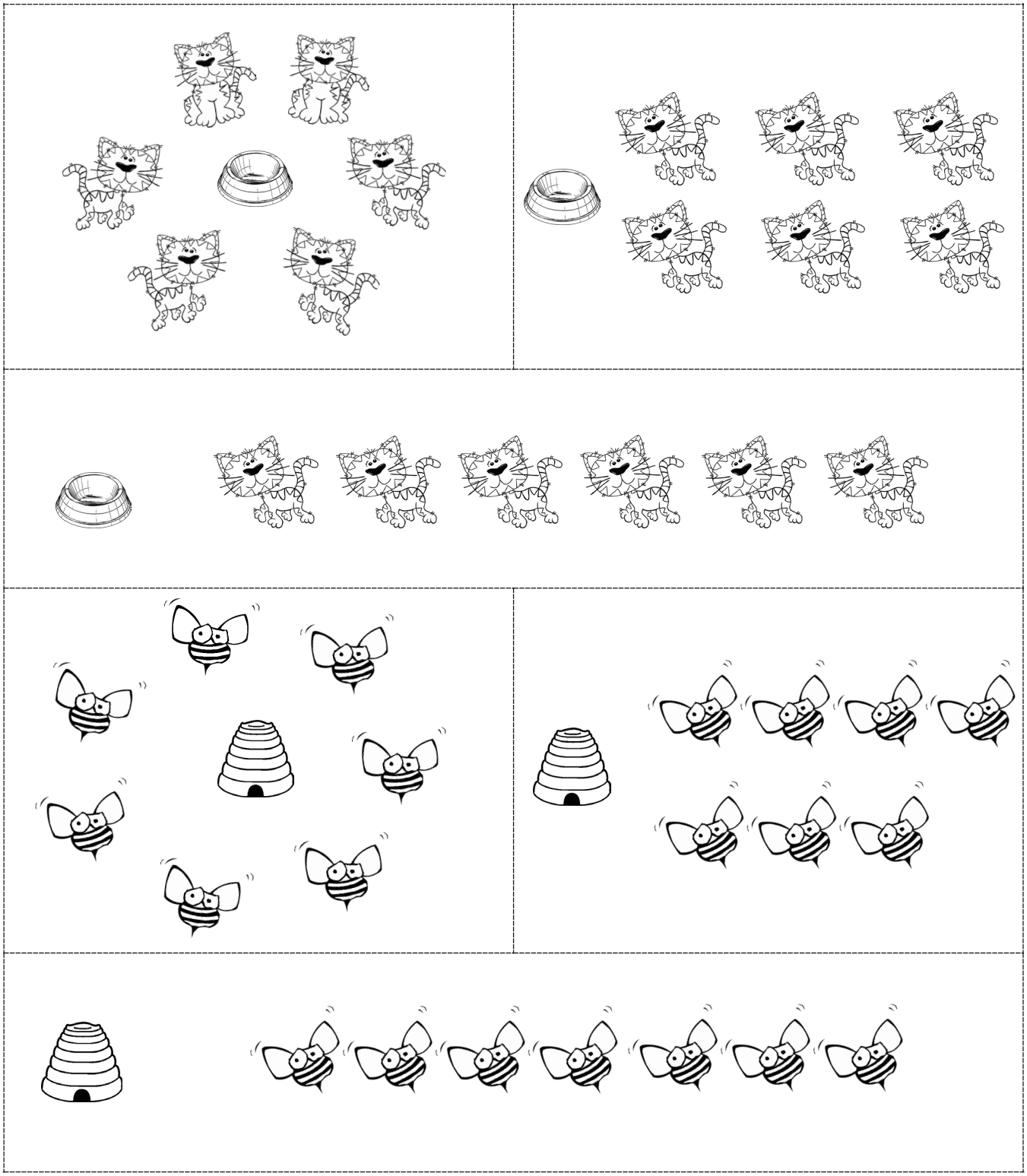
_____
underwater mat

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sharks

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6–7 picture cards

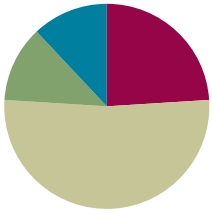
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Lesson 10

Objective: Tally 6 and 7 objects.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Flap, Slap, and Count to 8 **PK.CC.1** (2 minutes)
- Tally 5 Cotton Balls **PK.CC.3ab** (4 minutes)

Flap, Slap, and Count to 8 (2 minutes)

Note: Rote counting to 7 and 8 prepares students for the upcoming objective of touching and counting to 8 in Topic C.

T: Let's flap 7 times and count our flaps! Join in when you are ready. 1, 2, 3, 4, 5, 6, 7. (Repeat until most students are either flapping, counting, or ideally, both flapping and counting. Pause between counts.)

T: Let's slap our legs 7 times and count our slaps! 1, 2, 3, 4, 5, 6, 7. (Follow the same process as above.)

T: Let's flap 8 times and count our flaps! 1, 2, 3, 4, 5, 6, 7, 8.

T: Let's slap our legs 8 times and count our slaps! 1, 2, 3, 4, 5, 6, 7, 8.

Tally 5 Cotton Balls (4 minutes)

Materials: (S) 5 cotton balls (or other small interesting objects), personal white board and dry erase marker or paper and pencil

Note: This fluency activity prepares students for the Concept Development, in which they apply tallying to 5 to tally to 6 and 7 objects.

T: Put your cotton balls in a line across the top of your personal white board like this. (Demonstrate).

T: Now, touch and count them.

S: 1, 2, 3, 4, 5.

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T: You might start at the top of your board and draw tally marks to match your cotton balls like this. (Demonstrate moving from left to right while drawing one tally to match one cotton ball. As in the Concept Development, model starting the fifth tally at the top, but come down across the other four from left to right.)

The cotton balls are used again during the Practice portion of the Concept Development. At that time, students can pretend they are wooly sheep to match the context of the lesson.

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

In this lesson, students learn a method to draw the fifth tally starting on the top right and coming across to the bottom left. This method provides a nice way to see how the objects map directly to the tallies. However, students may draw the fifth tally starting on the top left or going straight across the middle. Accept any of these methods.

Application Problem (3 minutes)

Materials: (T) 13 objects that can be sorted to make groups of 6 and 7 (e.g., 6 sheep and 7 horses)

Old MacDonald is building a new barn for his horses and sheep. He needs to know how many of each animal he has so he can build the right number of stalls. Stalls are rooms or spaces for each animal inside the barn. How many sheep does he have? How many horses does he have?



Show the mixed group of 13 animals. Elicit ideas about how to sort into two groups. Allow students to guide the sort. Make intentional errors, putting a sheep with the horses, for example. After the sort, invite one student to touch the animals while the other students count chorally. By omitting teachers' voices in the count, student voices strengthen, and counting leadership develops within the class.

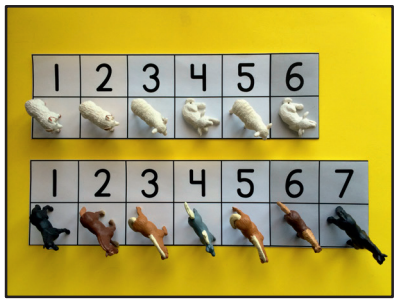
Note: This Application Problem reviews sorting, provides a context for the Concept Development, and asks children to count up to 7 in a linear configuration.

Concept Development (13 minutes)

Part 1: Concept Introduction

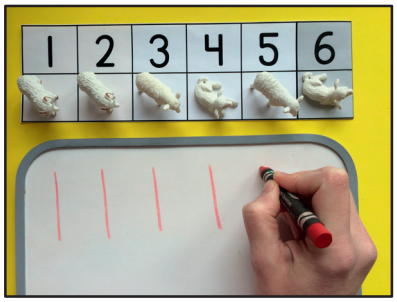
Materials: (T) 13 objects that can be sorted to make groups of 6 and 7 (e.g., 6 sheep and 7 horses), number path folded to 6 (Template), number path folded to 7 (Template), paper and crayon (or white board) (S) Paper and crayon (or white board)

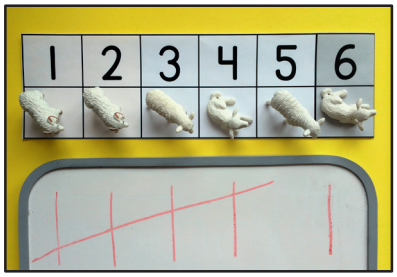
1. Display the **number paths**. Say, "Look at these drawings of stalls. Which stalls should we use to line up the sheep?" Help children understand that the number path to 6 matches the number of sheep by placing the sheep on the number path as pictured to the right. Repeat for the horses.



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2. Demonstrate how to tally 5. Draw **tally marks** beneath the first 4 sheep. Start the diagonal line directly below the fifth sheep, and cross the first 4 tallies. Have students draw 5 tallies on their writing surface. Say, "Our tallies don't match our sheep yet. Five needs 1…" Guide children to finish the sentence with "More!"
3. Demonstrate how to add another tally under the sixth sheep. Have children do the same on their writing surface.
4. As a class, touch and count each of the teacher's tally marks. Guide children to say, "We have 6 tally marks." Have them repeat the count using their tally marks. Demonstrate how to ask a neighbor, "How many tally marks did you make?" and help a child respond, "I made 6 tally marks."
5. Repeat Steps 2–4 with the 7 horses.
6. If children need more practice before working independently, use the number path to tally the number of stalls for sheep and horses.



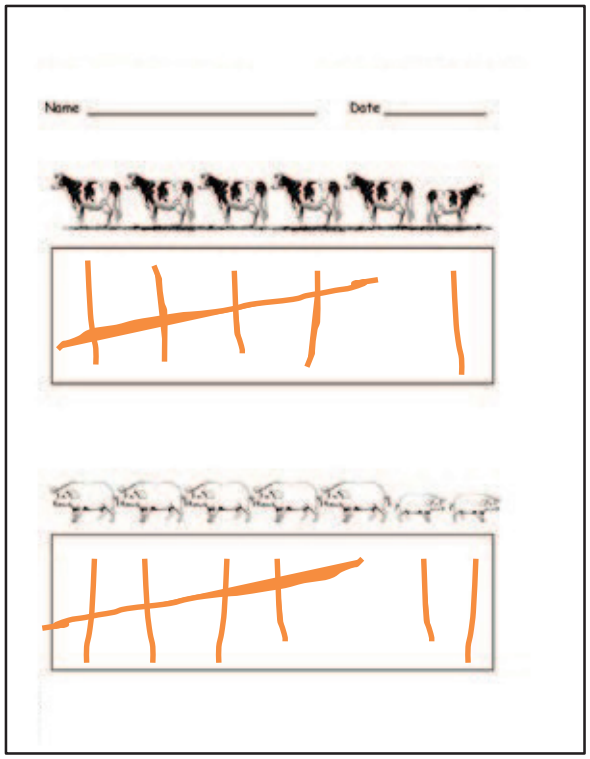


Part 2: Practice

Materials: (S) Small disposable bag with 7 cotton balls, paper and crayon or white board and dry erase crayon or marker, Problem Set

Prepare tables by placing a few more bags than students at each table.

1. Have children count the cotton ball "sheep." Invite them to make tally marks to match the number of "sheep" in their bags.
2. Have partners ask and answer *how many* questions using the sentence stems, "How many tally marks did you make?" and "I made __ tally marks."
3. Once children demonstrate skill with tallying using real objects, provide the Problem Set so that they can practice counting and tallying pictures.



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Student Debrief (3 minutes)

Lesson Objective: Tally 6 and 7 objects.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (number path, tally marks).

- How can we use **tally marks** to help us remember how many sheep Old MacDonald has?
- (Show the number path.) How does the **number path** help us see that 5 and 1 more is 6? How do our tallies help us see that 5 and 1 more is 6?
- Let's use our fingers to count to 6 the Math Way, too. How many fingers are raised on this hand (wiggle hand with 5 fingers)? How many fingers are sticking out on this hand (wiggle hand with 1 finger)? (Repeat with counting to 7.)

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

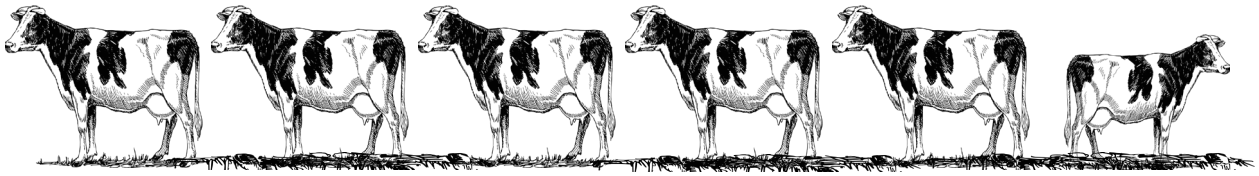
Allow students who are still developing their fine motor skills an alternative way to respond. Students can continue to use craft sticks to represent the tally marks on their personal white boards and Problem Sets. Provide students alternate times to develop their fine motor skills.

CENTER CONNECTION:

Have children take an inventory of items at their center using tally marks. For example, in the kitchen center, children might count 6 plates, draw a picture of a plate, and then draw 6 tally marks next to it.

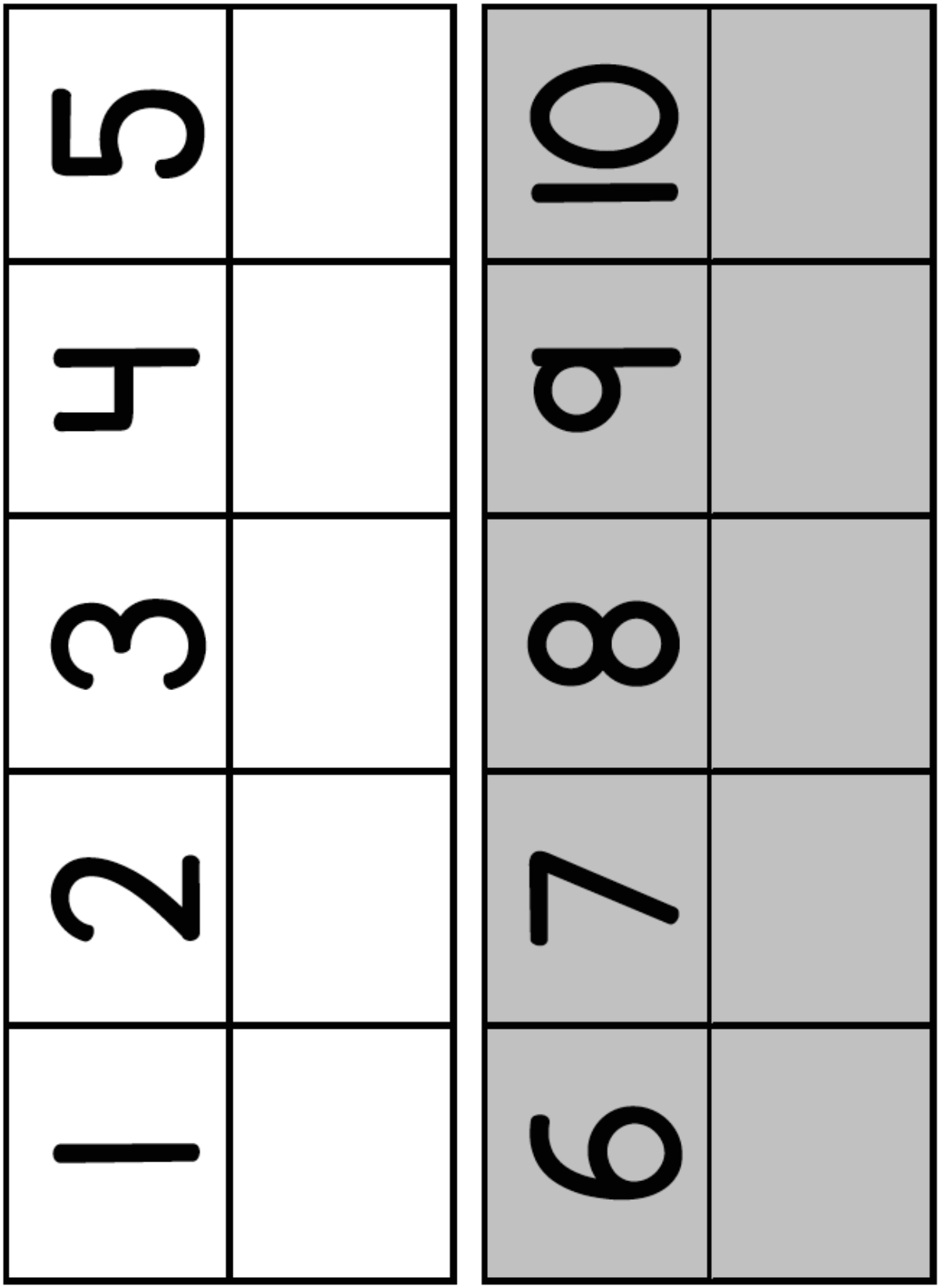
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number path

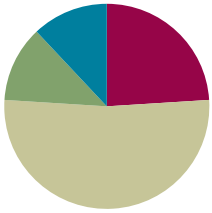
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Lesson 11

Objective: Look at a numeral and count out a group of up to 7 objects.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Balance and Count to 8 **PK.CC.1** (2 minutes)
- Compose 7 **PK.CC.3ab** (4 minutes)

Balance and Count to 8 (2 minutes)

Note: Rote counting to 7 and 8 prepares students for the upcoming objective of touching and counting to 8 in Topic C.

T: Let's stand on one leg and count to 7. Ready? 1, 2, 3, 4, 5, 6, 7. (Repeat until most students can balance the entire time. Have some laughs by slowing down or speeding up the count!)

T: Let's stand on the other leg and count to 7. Ready? 1, 2, 3, 4, 5, 6, 7. (Follow the same process as above.)

T: Let's stand on the other leg again and count to 8. Ready? 1, 2, 3, 4, 5, 6, 7, 8.

T: Let's stand on our other leg and count to 8. Ready? 1, 2, 3, 4, 5, 6, 7, 8.

Compose 7 (4 minutes)

Materials: (S) 5 loose cubes of one color, 2 of another color

Note: This fluency activity focuses on composing 7 from smaller parts. As students construct and count, they become more familiar with the number 7. If certain students have trouble counting to 7, have differentiated bags with 2 of one color and 3 of another color so that those students can work at a simpler level. Observe the ways students relate to the smaller towers. Which students count the cubes as they compose the towers? Which students compose and then count? Which students do not count the cubes at all until prompted?

T: Open your bags, and make two towers of different colors.

T: Put your parts together now to make one tall tower.

T: Count the cubes in your tall tower.

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Application Problem (3 minutes)

Materials: (T) Shoebox bottom with dirt and leaves, 7 sticks from outside, numeral cards

Tell students that they are making a home for Anton Ant. They want to add some sticks for him to crawl around on. Ask, "How many sticks have I collected?" Instruct a student to come forward and lay down the sticks in a tally configuration, up to 7. As the child places each tally stick, the remaining students count chorally, dragging out "five": "1, 2, 3, 4, fiiiive, 6, 7." Lay out the numeral cards in order from 1 to 7. Have students clap 7 times when the numeral 7 is displayed.

Note: This task reviews the use of tally marks and prepares students to count out a group of 7 in today's Concept Development.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Cup of 10 goldfish crackers, numeral cards 4–7 (Lesson 6 Template 2), aquatic animals (pictures or stuffed animals) (S) Cup of 10 goldfish crackers (provide substitute for children with allergy or dietary restrictions)

This activity can be done in a circle or at tables. If completing the activity on the floor, provide a piece of scrap paper or a paper towel for children to use when dumping their fish.



1. Tell students they are trainers at the aquarium. They need to prepare buckets of fish for the animals. Introduce the first aquatic animal by name (e.g., bottlenose dolphin).
2. Invite a student trainer forward to choose the numeral card showing that the dolphin needs 6 fish, but whisper the number to the student. Ask all students to name the number after the student shows the numeral.
3. Dump the fish from the cup. Count out the correct number of fish using self-talk to describe the thinking, "I'll make a line of 6 fish to feed the dolphin. I'll count and stop when I get to 6. One fish (drop 1 fish into cup), 2 fish (drop second fish), … 6 fish (drop sixth fish). Stop."
4. Ask students to count and make sure the amount is the correct number for the dolphin. If they are unsure, have them count the dots on the back of the numeral card and then count the fish to see if their count ends at the same number.
5. Repeat with another number, this time inviting children to count out their own line of fish. Encourage children to say, "Stop!" when they hear the target number.
6. Introduce another animal, and silently show the number 7. Have children count out a line of 7 fish.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Encourage students who are having difficulty recognizing the number 7 to trace the number and sky write the number. This motor movement can help trigger a student's memory. If students continue to have difficulty with naming the numeral, privately show the student the numeral and assist in counting the dots.

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Part 2: Practice

Materials: (S) Cup of 10 goldfish crackers, numeral cards 1–7 (Lesson 6 Template 2)

1. Pair students and send them to prepared tables as trainers.
2. Tell Partner A to take a card from the stack and show the number without saying it. Tell Partner B to count out that many fish and put them in a line. Then, partners switch roles.

MP.6

3. Encourage students to use the dots on the back of the cards if they need to match one-to-one to make a group.
4. As students work, circulate and describe what they are doing using parallel talk: "Cameron saw the number 7, so he is counting a group of 7 fish."



Student Debrief (3 minutes)

Lesson Objective: Look at a numeral and count out a group of up to 7 objects.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- (Show the numerals, and point to them while talking about their appearance.) I like the look of the number 6 because it is so curvy and round. What number up to 7 do you like the most?
- Number 7 is so simple, just two straight lines. What number do you think looks a little like it? (Accept varied answers.)
- What number is easiest for you to remember? What can help you remember the numbers that are more difficult to remember?
- Think about when we counted fish for the dolphin. How did you know when to stop adding more fish?

CENTER CONNECTION:

In the block center, have children count out up to 7 blocks and make a structure. Alternate between saying the number and showing the numeral. Differentiate this activity by matching the number of blocks to each student's ability.

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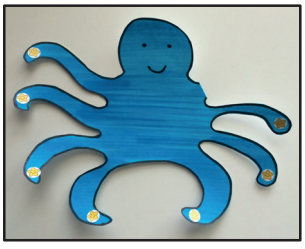
Topic C

How Many Questions with up to 8 Objects

PK.CC.1, PK.CC.3abc, PK.CC.4

Focus Standards:	PK.CC.1	Count to 20.
	PK.CC.3abc	Understand the relationship between numbers and quantities to 10; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement of the order in which they were counted. c. Understand that each successive number name refers to a quantity that is one larger.
	PK.CC.4	Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects.
Instructional Days:	4	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

In Topic C, children incorporate the number 8 into their understanding of the number core. More time is spent with the number 8 because it is the most challenging of the numbers 6–9, being 3 away from 5 and 2 away from 10.



Lesson 12 introduces 8 as 7 and *1 more*. Children touch and count 7 octopus tentacles with one-to-one correspondence (shown on right). When they discover that *1 more* tentacle is hiding, they touch and count again to find that the octopus has 8 tentacles (**PK.CC.3c**).

Lesson 13 explores 8 in relationship to 5 and asks children to count to 8 in linear configurations (**PK.CC.3abc**). In the analogous lesson in Topic A, an explorer uses rocks to make a path across a creek. The explorer in Lesson 13 uses different rocks to cross the creek and finds that she needs more rocks, which are represented by a different color. Children touch and count 8 rocks as the explorer crosses.

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The color change in the rocks emphasizes that 8 is 5 and 3 more. Understanding and using 5-groups in early numerical learning supports addition and subtraction work in Kindergarten and Grade 1.

In Lesson 14, children count the Math Way to 8, starting with the left-hand pinky and ending on the middle finger of the right hand. As they count, students pretend each finger is a chick hatching from its egg, the same context used in Topic A. On the Problem Set, children make lines to show the chicks that have hatched in each nest.

In Lesson 15, children work with arrays, first counting the legs on an ant and then representing them in a 2 by 3 array. Then, they count 8 legs on a spider and represent them in a 2 by 4 array (**PK.CC.4**). This early work with arrays supports the understanding that numbers can be broken into smaller numbers (decomposition) and put back together (composition) to form the original whole.

In Topic C, children develop fluency counting with one-to-one correspondence through 8. Through the Change of Pace Counting activity, children begin to retain the number words for longer periods of time. Regular interactions with composition and decomposition help solidify understanding of the numbers 6–8.

A Teaching Sequence Toward Mastery of *How Many* Questions with up to 8 Objects

Objective 1: Introduce 8, and relate 8 to 7 and *1 more*. (Lesson 12)

Objective 2: Use linear configurations to count 8 in relation to 5. (Lesson 13)

Objective 3: Count to 8 from left to right with fingers. (Lesson 14)

Objective 4: Count 8 objects in array configurations. (Lesson 15)

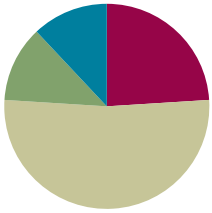
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Lesson 12

Objective: Introduce 8, and relate 8 to 7 and *1 more*.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- March, Flap, and Count to 8 **PK.CC.1** (2 minutes)
- Decompose 7 into 5 and 2 **PK.CC.3ab** (4 minutes)

March, Flap, and Count to 8 (2 minutes)

Note: Rote counting to 7 and 8 prepares students for the objective of touching and counting to 8.

T: Let's march in place and count to 7. Ready? 1, 2, 3, 4, 5, 6, 7. (Repeat until all are engaging at some level with the activity: marching, counting, or both marching and counting.)

T: Let's flap and count to 7. Ready? 1, 2, 3, 4, 5, 6, 7. (Follow the same process as above.)

T: Let's march in place and count to 8. Ready? 1, 2, 3, 4, 5, 6, 7, 8.

T: Let's flap and count to 8. Ready? 1, 2, 3, 4, 5, 6, 7, 8.

Decompose 7 into 5 and 2 (4 minutes)

Materials: (S) 5 loose cubes of one color, 2 loose cubes of another color

Note: Moving forward from Lesson 11, this fluency activity focuses on decomposing 7 into a tower of 5 and 2. As students decompose and count, they become more familiar with the number 7. Again, observe the ways students relate to the smaller towers. Which students tell the number of cubes in each part when they decompose? Which students decompose and then touch and count to figure it out? Which students do not count the cubes at all after decomposing? After composing?

T: Open your bags, and make a tall tower with all the cubes of one color touching.

T: Count the number of cubes in your tall tower.

T: Break your tower into parts by color.

T: Put your tall tower back together.

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Application Problem (3 minutes)

Materials: (T) 8 small potatoes

Tell students that they are going to be making a potato salad for a picnic. "Let's count how many potatoes I'll need to cook." Say the "One Potato, Two Potato" rhyme while touching and counting the potatoes.

One potato, two potato,
Three potato, four,
Five potato, six potato,
Seven potato, more.

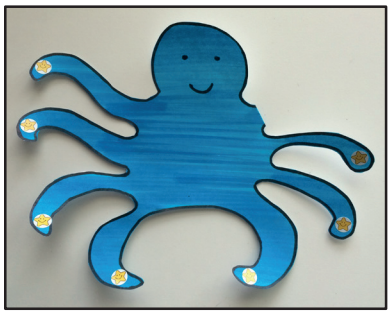
Ask, "What does *more* mean? How many potatoes do you think there will be at the end?" Variations on this task can include each child holding a potato and saying a part of the rhyme (e.g., "Three potato") when it's his or her turn.

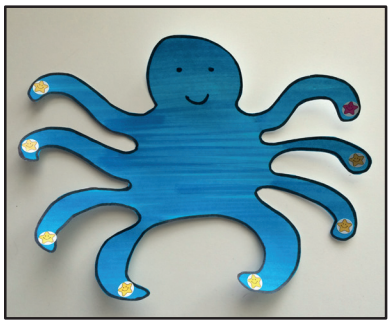
Note: This task serves as a nice lead-in to today's Concept Development, where children relate 7 and *1 more* to 8.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Cutout of Ollie Octopus (Template 1)





1. Show students the octopus with one arm hidden from view (bend arm back). Say, "This is Ollie Octopus! Let's count his arms."
2. Touch each arm as students count to 7. Say, "I'll put a sticker on each arm as you count again." Students count, "1, 2, 3, 4, 5, 6, 7."
3. After placing the last sticker, unbend the hidden arm and say, "Wait! He has 1 more arm! I'll touch while you count together: 1, 2, 3, 4, 5, 6, 7, 8."
4. (Fold back the eighth arm.) Ask, "What is 7 and 1 more (unfold the arm)?" Say, "Let's put on 1 more sticker." Place the sticker, and have students count again, "1, 2, 3, 4, 5, 6, 7, 8."
5. Ask, "How many stickers does Ollie have now?" Lead students to use a complete sentence, "Ollie has 8 stickers."
6. (Fold back the eighth arm.) Say, "Yes! So, 7 and 1 more is… (unfold the eighth arm)?" "8."

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Part 2: Practice

Materials: (S) Small resealable bag with small Ollie card (Template 2 cut apart), two colors of commercial counters or beans or macaroni (e.g., 7 green and 1 red)

Send partners to prepared tables.

1. Ask students to take out all the counters. Have them place each green counter on top of each of Ollie's arms, and say, "Count all the green counters." Have them touch and count and tell their partner how many they counted. (7.)
2. Tell students that Ollie has a scrape on 1 arm. Have students put the red counter on Ollie's hurt arm and count, "1, 2, 3, 4, 5, 6, 7, 8."
3. Say, "So, there are 7 green arms without scrapes and 1 red arm with a scrape." Tell your partner: "7 and 1 more is…?"
4. Invite partners to take turns telling a number story about Ollie's hurt arm using the 8 green and red counters.
5. Instruct students to count as they put one counter on each arm. Lead them to say, "1, 2, 3, 4, 5, 6, 7, 8. 7 and 1 more is 8."

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Students who are struggling to make connections using the octopus model could pair counting the octopus' arms with counting their own fingers.

Student Debrief (3 minutes)

Lesson Objective: Introduce 8, and relate 8 to 7 and *1 more.*

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

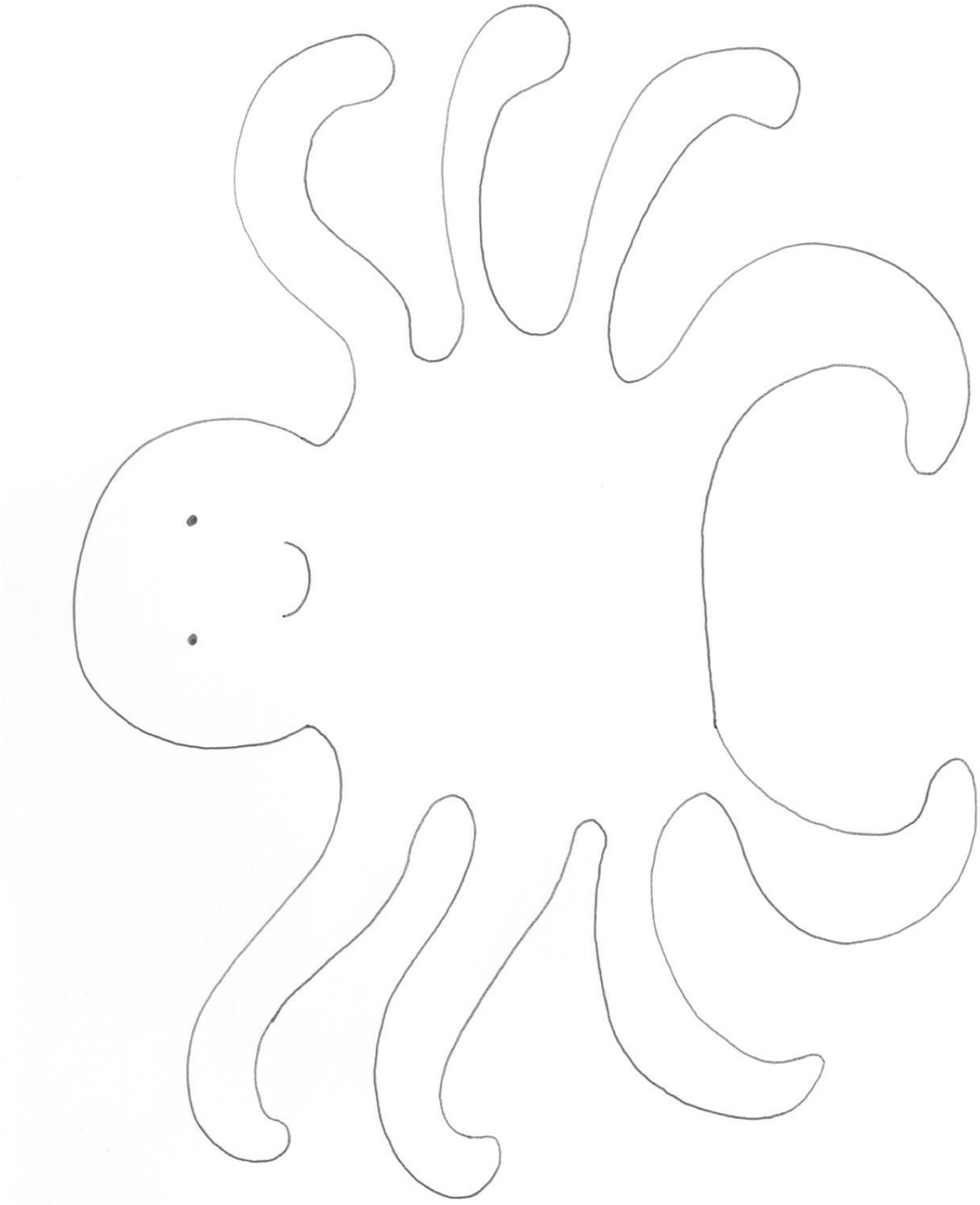
Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Close your eyes, and picture Ollie Octopus. Do you remember how many arms were not hurt? How many arms had a scrape? How many arms did Ollie have altogether?
- What was the same about Ollie Octopus and the counters that you counted?
- What is 7 and 1 more? Would you like to count to answer that question? Can you just remember the answer?
- Let's see which of these answers you know now. (Show 2 fingers.) What is 2 and 1 more? (Pause, give time to respond, and pop up 1 more finger.) Yes! Three. (Continue to show 3 fingers.) What is 3 and 1 more?

CENTER CONNECTION:

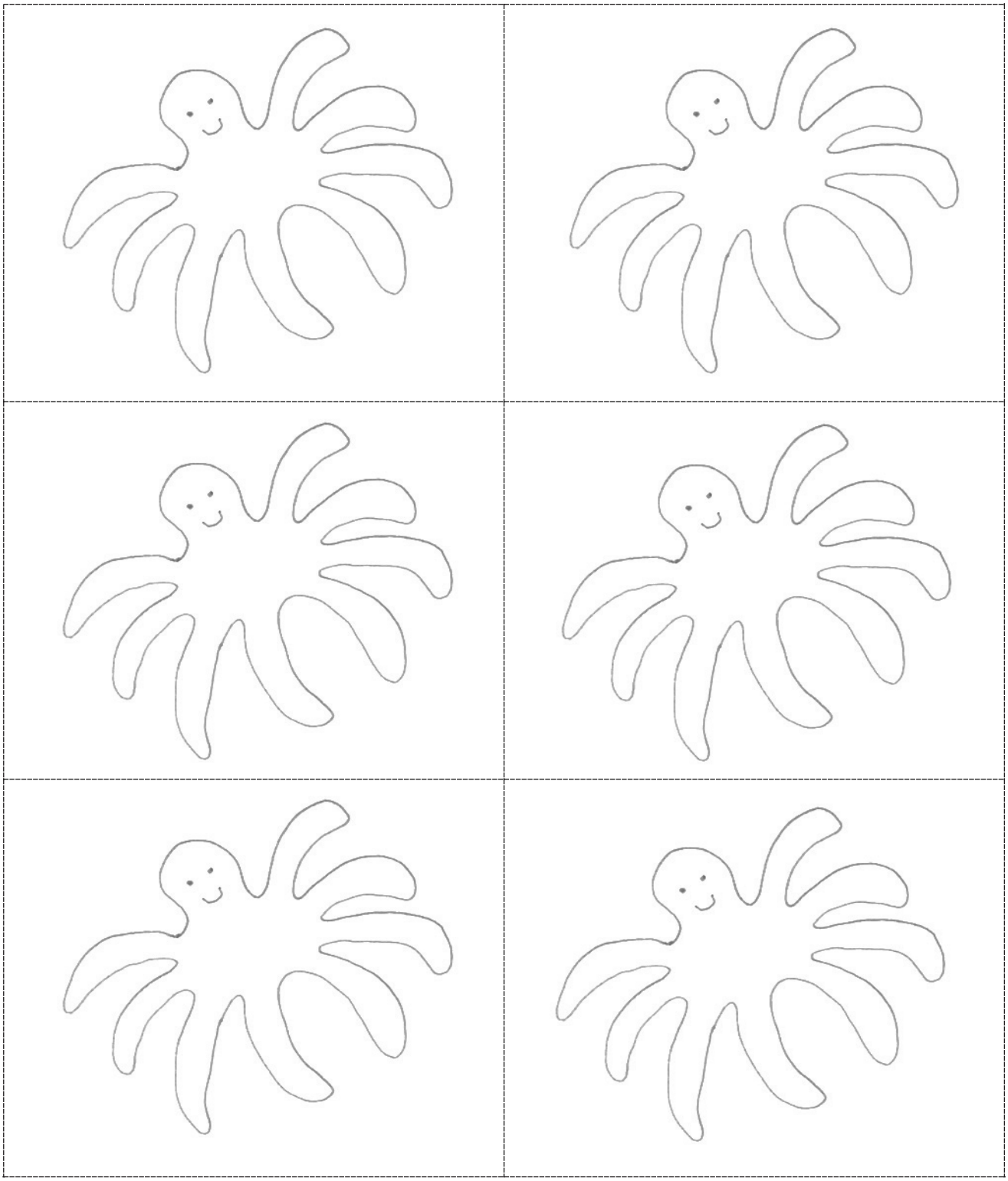
Help children make Ollie Octopus in the art center. For each student, provide a card stock circle with 8 hole punches and a set of 8 chenille stems with a knot on one side. Have children count the chenille stems before and after they thread them through the circle. Students might also enjoy painting Ollie Octopus.

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Ollie Octopus

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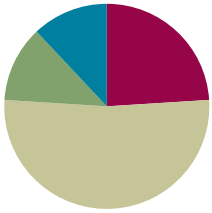
small Ollie cards

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Lesson 13

Objective: Use linear configurations to count 8 in relation to 5.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Count to 8 **PK.CC.1** (2 minutes)
- Octopus Arms **PK.CC.3ab** (4 minutes)

Count to 8 (2 minutes)

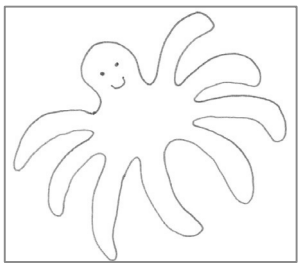
Note: Skill with rote counting gives students greater freedom to focus on the relationships between the numbers rather than struggling to retrieve the number words. By moving from loud to silent, students may start to realize they can count "inside their brains" without being heard.

T: Count to 8 for me so that I can hear you across the room.
T: Count to 8 for me so that I almost can't hear.
T: Count to 8 so I can't hear.
T: Close your eyes, and count to 8 without moving your lips. (It is difficult to be sure if students are doing so, unless they are using their fingers. Give wait time.)
T: It's like a secret, yes? I can count in my mind, and no one hears me or sees me counting.

Octopus Arms (4 minutes)

Materials: (S) Small Ollie card (Lesson 12 Template 2, cut apart), 8 pieces of macaroni

Note: This fluency activity encourages observing rather than directing student behaviors. Who takes the macaroni off one at a time? Four at a time? Who counts as he puts the macaroni back on his hands? Who notices there are 4 on each side?



T: Put a piece of macaroni on each of Ollie's arms.
T: Take the macaroni off one side of his body. (Pause to observe.)

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T: Put them back. (Pause to observe.)
T: Take the macaroni off the other side of his body. (Pause to observe.)
T: Put the macaroni back. Touch and count how many pieces of macaroni there are in all.

Application Problem (3 minutes)

Materials: (T) Backpack (S) Per pair: small resealable bag containing 6–8 objects (e.g., 8 crackers)

Say, "A new explorer friend is packing her backpack for a hike. Line up and count the items in your bag. Then, you can put it in her backpack." Partners should touch and count the items from their bags. Have them share their count when they add the bag to the backpack.

Note: Children need many opportunities to count larger groups of objects (6–8) within engaging contexts.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Creek mat (Lesson 2 Template), 3 real or plastic dimes, explorer figurine (optional)

Gather children in a circle around the creek template.



1. Say, "A different explorer has reached the same creek that her friend crossed before." Point out the line of rocks. Ask a volunteer to move the explorer across each rock while the class counts, "1, 2, 3, 4, 5."
2. Ask, "Do you think the explorer could reach the other side if there was 1 more rock?" Say, "Pretend this is a rock." Add 1 dime counter to the line.
3. Ask, "How many rocks are there now?" Have another volunteer move the explorer across each rock while the class recounts 5 with 1 more: "1, 2, 3, 4, 5, 6. There are 6 rocks."
4. Say, "We had 5 rocks and we added…" Students respond, "1 more!" Say, "Now, we have 6."
5. Ask, "Is she there yet?" (No.) "Let's put another rock." Repeat Steps 2–4 to count 7 and then 8 rocks.
6. Ask, "How many black rocks are there?" Challenge students to ask a *how many* question about the new rocks.
7. Ask, "How many rocks did the explorer walk on to cross the creek?" Students recount to 8.

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Part 2: Practice

Materials: (S) Creek mat (Lesson 2 Template), 8 play or real dimes

Note: If play dimes are used, be sure they are true to size. Use a counter that fits Step 3 well.

Send children to prepared tables.

1. Tell students, "It's your turn to help the explorer cross the creek."
2. Say, "First, take out your counters and cover the rocks in the creek." Tell your partner how many rocks are in the line.
3. Say, "Now, put 1 more rock in the line."
4. Guide students to count the covered black rocks, count the new rocks, and then count *all* the rocks each time they put 1 more in the line. Instruct them to ask and answer *how many* questions. MP.6
5. Repeat Steps 3 and 4 so that there are 7, and then 8, rocks. Celebrate the explorer's crossing.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Provide opportunities for students to practice counting throughout the day. Students might enjoy acting as an explorer as they move around the classroom. During center time, "rocks" could be placed around the room, and students could hop or step from rock to rock as they whisper-count.

Student Debrief (3 minutes)

Lesson Objective: Use linear configurations to count 8 in relation to 5.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- How many rocks were in the creek at first? What did you need to do to help the explorer to cross the creek?
- (Display creek mat with 8 rocks.) Count the black rocks. (Pause as students count.) Count the new rocks. (Pause.) Count *all* the rocks. (Pause.) How many did you count altogether?
- (If students are ready, consider asking the following question and demonstrating with linking cubes.) Listen to my pattern: 5 and 1 more is 6. 6 and 1 more is…? 7 and 1 more is…?
- (Show 5 black rocks and 3 dimes extending the line.) Let's count the rocks! What do you like about the number 8?

CENTER CONNECTION:

At the block center, give each child 5 of one type of block and 3 of a different type of block (e.g., 5 rectangular blocks and 3 triangular blocks). First, have them line up their 8 blocks and count. Then, have them build with their 8 blocks. Compare the structures, and help the children count the number of blocks in each structure. Notice that all the structures are different, but each has 8 blocks.

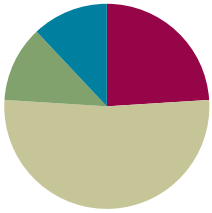
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Lesson 14

Objective: Count to 8 from left to right with fingers.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Change of Pace Counting to 8 **PK.CC.1** (2 minutes)
- Use 1 More to Make a Tower of 8 **PK.CC.3c** (4 minutes)

Change of Pace Counting to 8 (2 minutes)

Materials: (T) 8 small paper plates

Note: By changing the pace of the counting, students start to retain the number words for longer periods of time, helping them to remember what 1 more is, which lays the foundation for *counting on* in Grade 1.

T: Let's set the table for 8 people. Only say the number when the plate touches the carpet. (Hover the first plate over the "table." There might be some false starts that make everyone laugh.)

S: 1.

T: (Place the second and third plates quickly.)

S: 2, 3.

T: (Pause before placing the fourth and fifth plates quickly. Again, there might be laughter and false starts.)

S: 4, 5.

T: (Pause before placing the sixth, seventh, and eighth plates quickly. If students have lost track, simply start at 1, and build up again without replacing the plates.)

S: 6, 7, 8.

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Use 1 More to Make a Tower of 8 (4 minutes)

Materials: (S) 8 loose linking cubes (5 of one color, 3 of another color)

Note: Moving forward from Lesson 13, this fluency activity focuses on *1 more,* again with the teacher observing more than directing. For example, the fluency does not direct students to make 2 towers of distinct colors. Rather, observe what they do independently. Also, the student language piece is omitted to allow for listening to what students say as they build their tower.

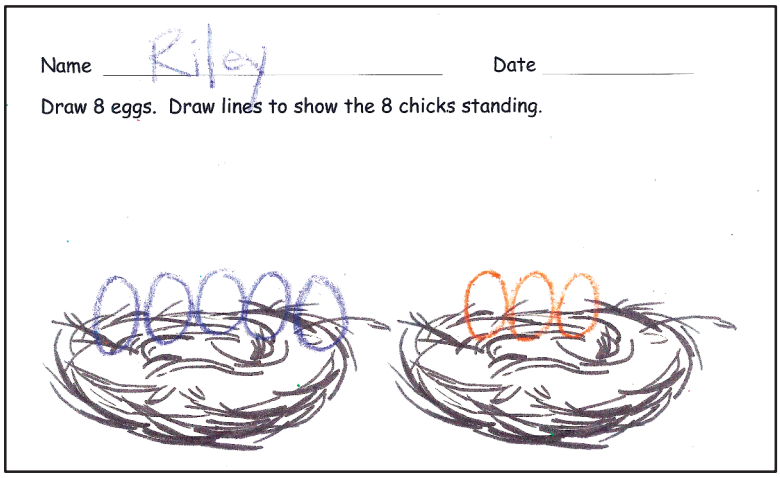
T: Open your bags, and take out 1 cube to start your tower.
T: Take out 1 more cube. Put 1 more cube on your tower.
T: Take out 1 more cube. Add 1 more cube to your tower.

Continue the process until the tower reaches a height of 8 cubes. Have students compare their towers.

Application Problem (3 minutes)

Materials: (S) Per pair: Problem Set, 1 blue and 1 orange crayon

Give each student a Problem Set with two nests drawn on it. Say, "5 eggs are in a nest. Use your blue crayon to draw a line of 5 eggs in one nest." (Pause.) "There are 3 more eggs in another nest. Use your orange crayon to draw the 3 eggs in the other nest." (Pause.) "Count how many eggs are in the two nests."



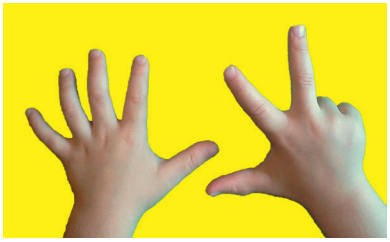
Note: The link between drawing and math is important to instill in students from the beginning of their formal math learning. Simple drawings are often the best choice for communicating a mathematical idea. Encourage students to use a circle, line, or smiley face to draw each chick. These drawings help students connect the number composition and decomposition from Modules 1 and 3 to addition and subtraction stories in Module 5.

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Concept Development (13 minutes)

Part 1: Concept Introduction

1. The teacher pretends that all of his or her fingers are chicks by waving hands and wiggling fingers. Then, show students all the chicks in eggs in nests (two fists on a surface).
2. Demonstrate the first 5 chicks hatching, starting with the pinky, without pausing (left to right starting from the pinky and moving to the thumb of the left hand). Have the children count the chicks as they emerge, "1, 2, 3, 4, 5."
3. Say, "There are more chicks waiting to hatch in this nest! (Shake the right fist.) Three of them hatch." Have 3 more chicks hatch by showing the thumb, index finger, and middle finger of the right hand.
4. Say, "Let's count how many chicks have hatched. To support a precise count, the teacher lifts his or her fingers off the surface and then drops them as students count, "1, 2, 3, 4, 5, 6, 7, 8."
5. Have the children show their nests and their chicks. Have them put all the chicks in eggs in the two nests (two fists), and then count 8 chicks hatching, starting with the pinky.
6. Ask them how many chicks are waiting to hatch.



NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

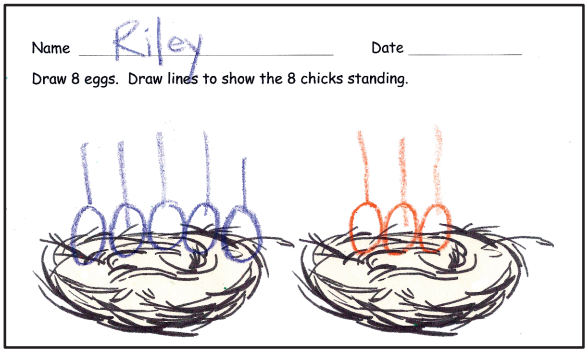
Students may have a difficult time lifting their fingers as they count while their fists are laying flat on the table. Taping the nest template to the wall or board, or placing it on an inclined plane (e.g., a binder), could help students manipulate their fingers more easily.

Part 2: Practice

Materials: (S) Problem Set, crayons

Send students to prepared tables.

1. Have students make their fists on top of the nests of the Problem Set. Tell them, "Eight chicks hatch, one at a time." Have them count from left to right as they show each finger.
2. Have students draw to show each chick that hatched. (Demonstrate one possible way of showing this.)
3. Ask questions while circulating. "How many chicks hatched?" "How many are still in their eggs?" "How many chicks hatched from this nest? This one?" "Which chick hatched first? Which was the last?" MP.6
4. Ask the children to show their partners two ways to count the chicks who came out, by touching and counting using their picture and by counting on their fingers.



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Student Debrief (3 minutes)

Lesson Objective: Count to 8 from left to right with fingers.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Show me your two nests. (Students show two fists.) Show me all the chicks. (Students show all their fingers.) On your fingers, show me the chicks that hatched.
- (Display a completed Problem Set while children continue to show 8 fingers.) How is your picture of the chicks who hatched like the 8 fingers you are showing?
- What is different about counting on your fingers to 5 from counting to 8? What is different about counting to 7 from counting to 8?

CENTER CONNECTION:

In the sensory center, provide opportunities for students to practice moving 8 fingers through a variety of materials (e.g., sand, oatmeal, shaving cream, finger paint). Use the nest context as a starting point, but invite children to make up other stories about their 8 fingers and the 8 paths that they create. This activity helps build fine motor muscles needed for counting the Math Way.

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Name _____ Date _____

Draw 8 eggs. Draw lines to show the 8 chicks standing.



Name _____ Date _____

Draw 8 eggs. Draw lines to show the 8 chicks standing.



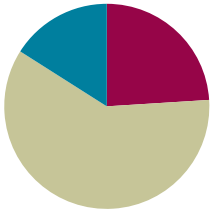
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Lesson 15

Objective: Count 8 objects in array configurations.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Concept Development	(15 minutes)
Student Debrief	(4 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Change of Pace Counting to 8 **PK.CC.1** (2 minutes)
- Compose a Tower of 8 **PK.CC.3c** (4 minutes)

Change of Pace Counting to 8 (2 minutes)

Materials: (T) 8 paper dessert plates, 8 forks

Note: By using a change of pace, students start to retain the number words for longer periods of time, helping them to remember what 1 more is, which lays the foundation for *counting on* in Grade 1.

T: (Place the plates in an array of 2 fours, as if at a rectangular table.) Who remembers how many plates we set yesterday?

S: 8.

T: Let's count a fork for each plate so the guests can eat birthday cake!

As in Lesson 14, use a change of pace while counting out the forks for each plate. Do not let students count ahead of the placement of each fork. Keep it playful and fun.

Compose a Tower of 8 (4 minutes)

Materials: (S) 8 loose linking cubes (4 of one color, 4 in another)

Note: Moving forward from Lesson 14, today's fluency activity sets the stage for the Concept Development's array configuration. Observe the choices students make when asked to make two towers that are the same. Do they make towers that are simply the same size? The same color? Or, the same color pattern? Assure students there are many correct ways to make the towers.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Periodically check for understanding of the directions. Students who are acquiring language may be hesitant to ask questions. One option to check for understanding of the directions while still allowing exploration of 8 is to provide a visual model of the direction using a different number of cubes (e.g., 4 or 6 cubes).

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T: Use all your blocks to make two towers that are the same. (Pause and observe.)

T: Put your two small towers together to make one tall tower. (Pause and observe.)

T: Break your tower again into two towers that are exactly the same. How many cubes are in one small tower? (Pause and observe counting strategies.)

T: Put your towers together again. Touch and count to find how many cubes there are in all. (Pause and observe counting strategies.)

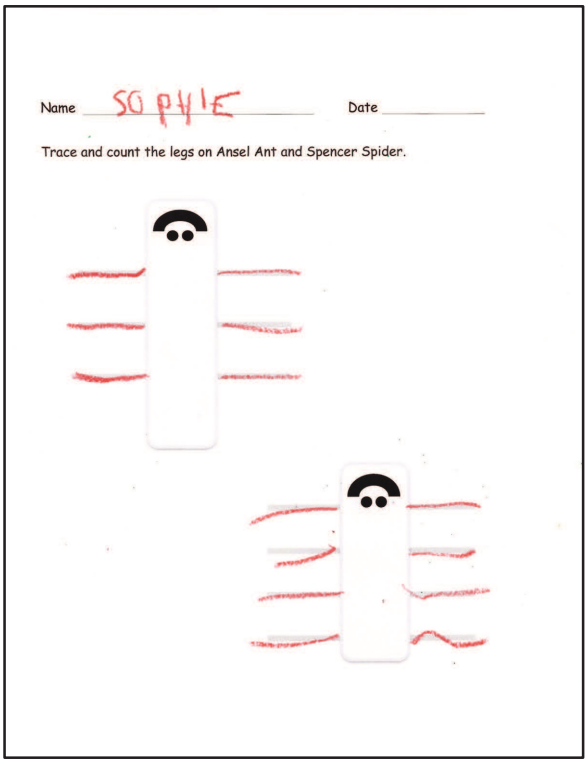
Concept Development (15 minutes)

Part 1: Concept Introduction

Materials: (T) 2 tongue depressors (craft sticks, pencils), 7 chenille sticks

Prepare the "ant" by twisting three chenille sticks an equal distance apart around the depressor, stick, or pencil. Prepare the "spider" in the same way using four chenille sticks.

1. Introduce students to Ansel Ant. Tell them, "Ansel needs to stretch his legs before he goes for a walk. Let's count his legs."
2. Bend each leg, moving through the array configuration from left to right, top to bottom, as students count, "1, 2, 3, 4, 5, 6. 6 legs." Set Ansel down so that he is standing, ready to go for a walk. Tell students Ansel would like an ant made out of children to go for a walk with him.
3. Ask three students to pretend to be an ant by having them stand one behind the other. Have the last two children place their hands on the shoulders of the child in front of them.
4. Starting with the child in front, have each student shake one leg, then the other, as the class counts, "1, 2, 3, 4, 5, 6. 6 legs."
5. Repeat Steps 1–4 to introduce Spencer Spider.
6. Group the remaining students so that everyone is a part of an ant or a spider. Invite them to stroll around the room with Ansel and Spencer.


Name SOPHIE Date

Trace and count the legs on Ansel Ant and Spencer Spider.

Part 2: Practice

Materials: (T) Problem Set (S) Problem Set, crayon

Gather students in a circle before sending them to the prepared tables.

1. Show students the Problem Set. Tell them, "Use your crayon to put legs on Ansel and Spencer."
2. Show students how to trace each leg, moving from left to right and top to bottom. Have them count aloud as they trace each leg. MP.6
3. Instruct students to ask and answer *how many* questions about each animal with a neighbor.

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4. Circulate as students work, encouraging them to follow an organized counting path so that they do not skip any legs.

Student Debrief (4 minutes)

Lesson Objective: Count 8 objects in array configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

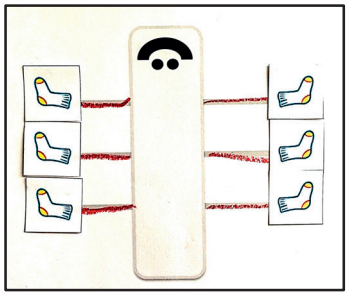
Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

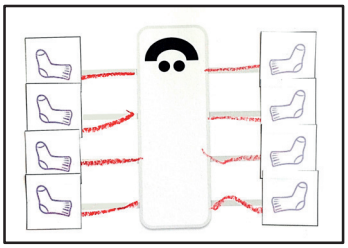
Cut out socks for Ansel and Spencer (Template) in advance.

- Let's lay out some socks for Ansel Ant. Tell me when to stop. (Lay out three pairs in an array configuration, one sock at a time.) (Repeat for Spencer.)
- (Remove one of Spencer's socks.) Spencer Spider can't find all his socks! How many socks is he missing? How do you know? How many socks does he need so that every foot is warm and toasty?
- (Show images of 6 and 8 dots in array configurations.) Which set of dots shows how many legs Ansel Ant has? Which set of dots shows how many legs Spencer Spider has?

CENTER CONNECTION:

Use the dramatic play center as a place for children to pretend to be different animals alone or in a group. Animal legs generally come in pairs and can provide interesting array configurations for students to count (e.g., duck, horse, ladybug, octopus). Students may want to make extra "legs" so that they can play Ansel or Spencer independently. Support them in counting out the right number of legs.

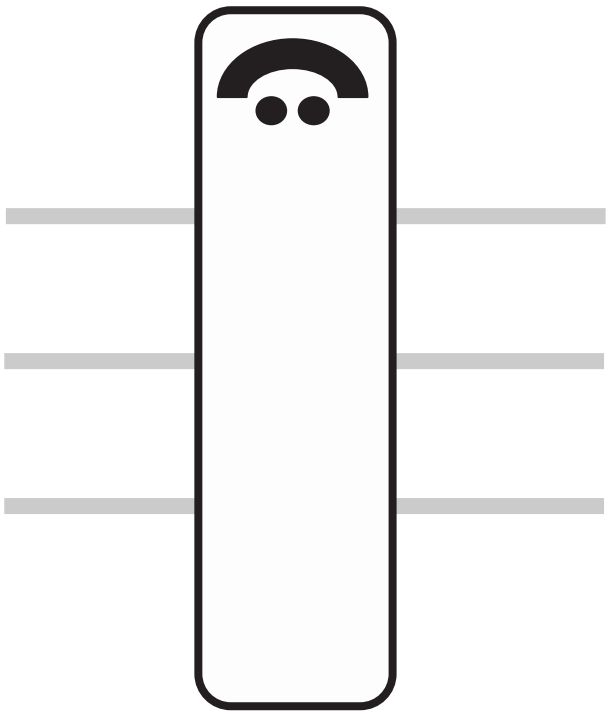


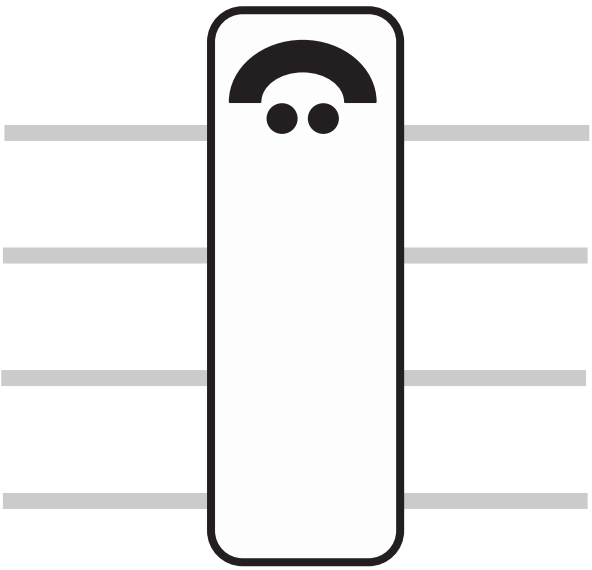


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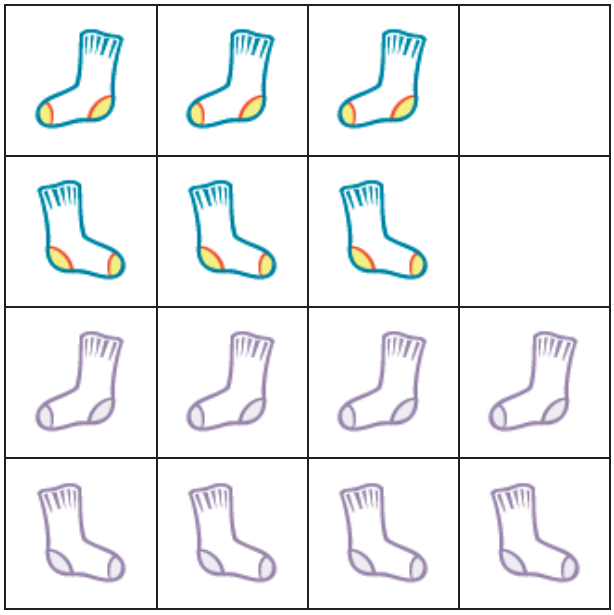
Name _____ Date _____

Trace and count the legs on Ansel Ant and Spencer Spider.





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socks for Ansel and Spencer

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Topic D

Matching One Numeral with up to 8 Objects

PK.CC.3ab, PK.CC.4

Focus Standards:	PK.CC.3ab	Understand the relationship between numbers and quantities to 10; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement of the order in which they were counted.
	PK.CC.4	Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects.
Instructional Days:	5	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

Topic D follows the instructional path laid out in Topic B, matching a group of up to 8 objects to the numeral that tells *how many* (**PK.CC.4**). The pre-written numeral is introduced in Topic D so that students have plenty of time to touch and count to 8 before matching the count to the abstract numeral.

Lesson 16 introduces the numeral 8 as children practice decomposing and composing 8. Again, children see that there are familiar numbers inside 8: "We love 4 and know it so well. When we put these 4-sticks together, we have 1 longer stick. The longer stick has 1, 2, 3, 4, 5, 6, 7, 8. 8 cubes."

In Lesson 17, children count up to 8 objects arranged in a circular configuration, carefully marking the start of their count, and they choose the numeral that tells *how many*. In Lesson 18, they arrange up to 8 seeds in varied configurations and then choose the matching numeral **(PK.CC.3b)**. As in Topic B, although the configurations look different, both the last number said and the numeral that matches how many are the same!

In Topic B, children learned to create tally marks to represent groups of up to 7 objects. In Lesson 19, they extend this ability to match tallies to the number 8, tracking how many flowers (up to 8) the bees order at the Pollen Café.

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In Lesson 20, again contextualized in the Pollen Café, children make a bouquet of up to 8 flowers after seeing a numeral. At this point, rote counting to 10 should be easy enough for children that they can remember their target number (8) and stop when they reach it: "…, 6, 7, 8. I counted 8 flowers."

In preparation for the second half of the module, Topic D Fluency Practice focuses on rote counting to 9 and 10 through energizing movement activities. Children also have many opportunities to touch and count as well as to compose and decompose number towers of 8.

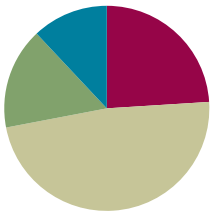
A Teaching Sequence Toward Mastery of Matching One Numeral with up to 8 Objects	
Objective 1:	**Compose 8, and then decompose into two parts. Match to the numeral 8. (Lesson 16)**
Objective 2:	**Count 8 objects in circular configurations. (Lesson 17)**
Objective 3:	**Arrange and count 8 objects in varied configurations. (Lesson 18)**
Objective 4:	**Tally 8 objects. (Lesson 19)**
Objective 5:	**Look at a numeral and count out a group of up to 8 objects. (Lesson 20)**

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Lesson 16

Objective: Compose 8, and then decompose into two parts. Match to the numeral 8.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(4 minutes)
Concept Development	(12 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Flap and Count to 10 **PK.CC.1** (2 minutes)
- Count Socks **PK.CC.4** (4 minutes)

Flap and Count to 10 (2 minutes)

Note: This fluency activity introduces counting by rote to 10. As students prepare to move into the second half of the module, it is preferable that they have mastery of the counting word sequence so that their attention can be directed to touching and counting in different configurations and seeing simple number relationships such as *1 more*.

T: Let's pretend we are big, colorful birds. Let's flap our wings and count to 9. Join in when you are ready! (Repeat until all are participating.) 1, 2, 3, 4, 5, 6, 7, 8, 9.

T: Let's flap and count to 10. Join in when you are ready! (Repeat until all are participating.)

As in Lesson 14, use a change of pace while counting the number of flaps. Do not let the students count ahead of each flap. Keep it playful and fun.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

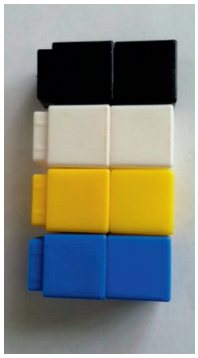
Students who are acquiring language may be hesitant to ask questions. One option to check for understanding of the directions while still allowing exploration of 8 is to demonstrate by providing a visual model of the direction using a different number of cubes (e.g., 4 or 6 cubes).

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Count Socks (4 minutes)

Materials: (S) 8 loose cubes (2 each of 4 colors)

Note: In this fluency activity, students are given the opportunity to practice counting 8 objects in an array configuration.



T: Pretend your cubes are socks. Find two socks that match, and put them together. (Pause as students do so.)

T: Put another pair of socks together. (Pause and observe.) And another. (Pause.) And another. (Pause.)

T: Stack your pairs of socks like this (demonstrate as pictured to the right). Count the socks in my stack as I touch them (demonstrate touching left to right and top to bottom). 1, 2, 3, 4, 5, 6, 7, 8.

T: Now, you touch and count your socks. (Pause and observe the students' strategies as they move through the cubes.)

Application Problem (4 minutes)

Tell students that the class is having a barnyard dance today. To model 1 row of 2, ask one child to be a dancing chicken, shaking one leg and then the other as the class counts, "1 leg, 2 legs."

To model 2 rows of 2, ask two children to make a dancing cow by forming a line, with the child in the back placing her hands on the shoulders of the other. Starting with the child in front, have each student shake one leg and then the other as the class counts, "1 leg, 2 legs, 3 legs, 4 legs."

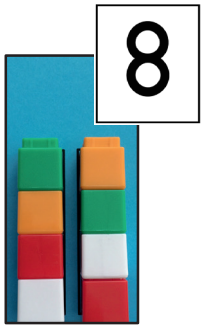
To model 3 and 4 rows of 2, repeat the process by creating a dancing ant next and then finally a dancing spider.

Culminate the activity by having the spider dance a different way by first standing on its left legs and then on its right legs. Ask the students how many legs are in the air each time.

Note: Because animal legs come in pairs, they provide a context for creating arrays of 2, 4, 6, and 8. Arrays provide a natural entry point for embedded numbers, as they make it easy to see a whole broken into different parts.

Concept Development (12 minutes)

Part 1: Concept Introduction

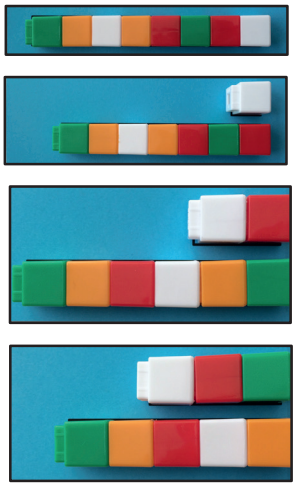


Materials: (T) 8 loose cubes (multiple colors), Partners of 8 Puzzle (4- and 4-stick, Template cut apart) (S) small resealable bag with 8-stick of multiple colors, 1 Partners of 8 Puzzle (Template cut apart), numeral card 8 (Lesson 6 Template 2)

1. Place the 8 loose cubes on the floor. Invite two students forward, and tell each to make a stick of 4 cubes.

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2. Display the puzzle template. Invite the two students to place their sticks on the matching puzzle places.
3. Use self-talk while joining the two sticks: "These are such friendly numbers! We love 4 and know it so well. I wonder what would happen if I put these two sticks together." Join the sticks, and guide children to see that there is now one longer stick. Count the 8 cubes as a class.
4. Introduce the numeral 8. "This is how we show the number 8. Everyone, trace it with your finger in the air." Invite students to share their thoughts about its shape and if it reminds them of anything.
5. Ask, "Can I break this 8-stick so I have the same two small sticks again?" Invite a student to demonstrate that the sticks are the same by placing them on the puzzle.
6. Distribute a bag to each student. Invite children to touch and count the cubes in their sticks. Have them trace the numeral 8 with their fingers and say "eight" as they do so.
7. Have children break their sticks to match their puzzles. Guide them to describe their work. "I made smaller sticks." "I broke my 8-stick into two parts." "I have some cubes here and some cubes here." "I have 3 cubes here and 5 cubes here." Instruct children to put their sticks back together to form the original stick. Every time they count and make 8 again, have them use the numeral card to trace 8 with a finger.



Note: Although formation of numbers 6–10 is not a Pre-K standard, it is helpful to note the correct formation of an 8. When students are tracing the 8, provide them with the correct way to form an 8. In Kindergarten, students learn a rhyme: "Make an S and do not stop. Go right back up, and an eight you've got." (Another possible rhyme is "Make an S and do not wait. Go back up, and it's an 8.")

Part 2: Practice

Materials: (S) 8-stick, Partners of 8 Puzzles (Template cut apart), numeral card 8 (Lesson 6 Template 2)

Continue to work in the circle, so children can easily pass the puzzles.

1. Distribute a new Partners of 8 puzzle to each child. Demonstrate how to break the stick into two parts to match the puzzle.
2. Give students a chance to break their sticks and place them on the puzzle. Guide them to use their words to describe their work as they did in the Concept Introduction.
3. Have children put the parts together again. Guide them to count and tell how many are in their 8-stick. Each time they make 8 again, have them trace the numeral.
4. Have children pass the puzzle to the right and repeat Steps 2 and 3.

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

A multi-sensory approach when learning numerals helps students with number recognition. Provide multiple types of numerals for tracing made from a variety of media, for example, puffy paint, sand paper, or string. Large numeral cards can also be made for students to "trace" as they walk or hop over the numeral, which also develops their gross motor skills.

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Student Debrief (3 minutes)

Lesson Objective: Compose 8, and then decompose into two parts. Match to the numeral 8.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

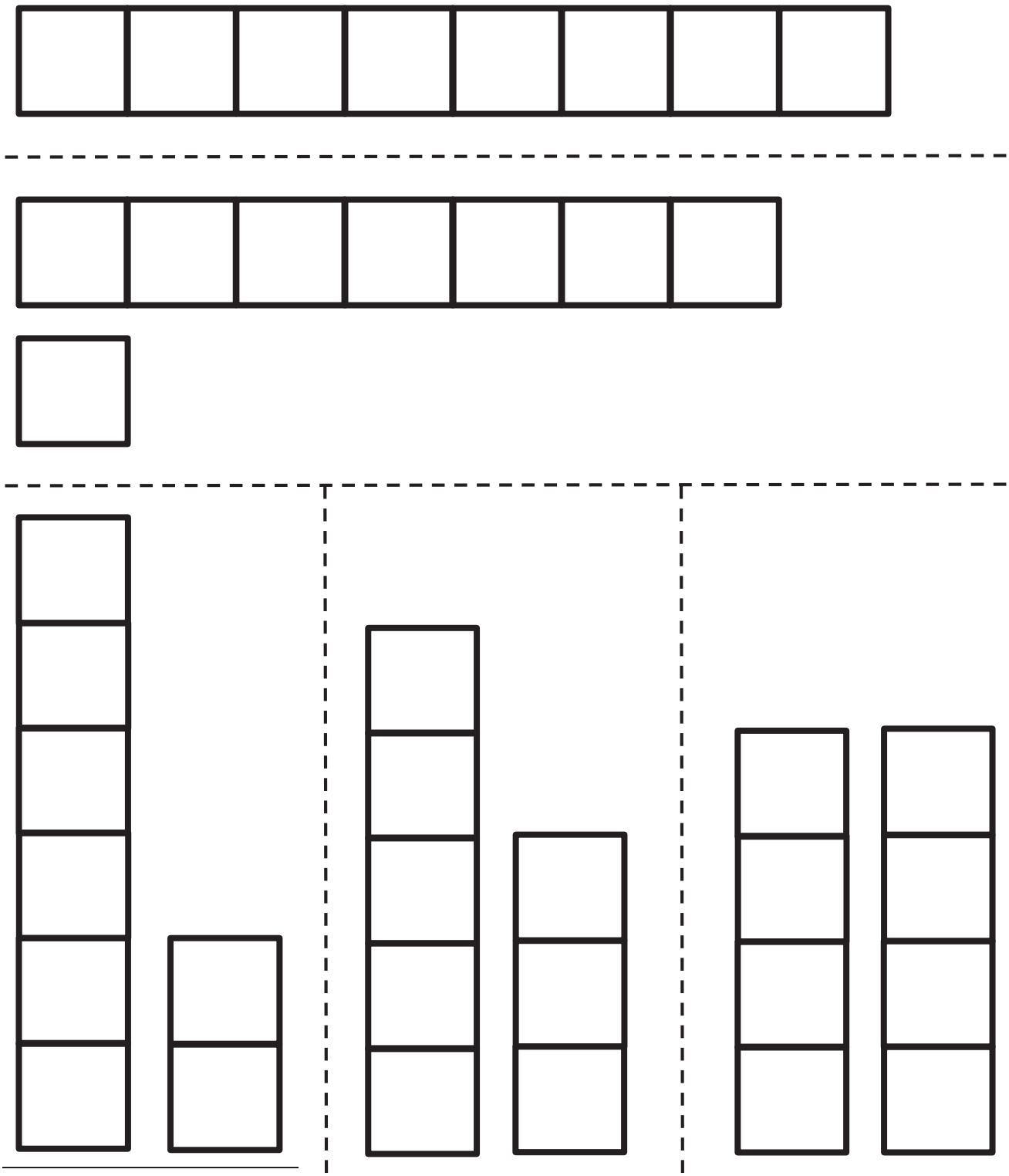
- Show me 8 fingers. Wiggle 3 fingers. (Repeat wiggling different numbers of fingers. Let students use their fingers in any way they wish.)
- (Have four students make a dancing spider again by standing on their left feet and then on their right feet.) Can you break your 8-stick to match the number of legs in the air and legs on the ground? Can you use your fingers to show the number of legs in the air and legs on the ground?
- Let's compare the number 8 with the number 1. How do they look different? (Repeat with 2–7.)

CENTER CONNECTION:

Add the Partners of 8 Puzzles to the block or puzzle center. Add puzzles for numbers 3, 4, 5, 6, and 7 for variety. Use a coding system so children are able to find the puzzles that go with each number (e.g., all Partners of 8 Puzzles on blue paper).

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Cut along dashed lines to prepare Partners of 8 Puzzles.



partners of 8 puzzles

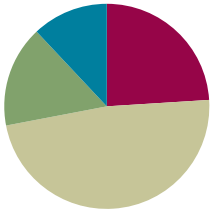
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Lesson 17

Objective: Count 8 objects in circular configurations.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(4 minutes)
Concept Development	(12 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Clap and Count to 10 **PK.CC.3a** (2 minutes)
- Make a Line of 8 Beans **PK.CC.3a** (4 minutes)

Clap and Count to 10 (2 minutes)

Note: This fluency activity anticipates the work of the second half of Module 3 by preparing students to count to 10 by rote so they are ready to count with one-to-one correspondence. By drawing out the "fiiiiive," the students start to see the relationship of 9 and 10 to 5.

T: Let's clap and count to 9. Join in when you are ready. 1, 2, 3, 4, fiiiive, 6, 7, 8, 9. (Repeat the count until all are participating.)

T: Let's clap and count to 10. Join in when you are ready. 1, 2, 3, 4, fiiiive, 6, 7, 8, 9, 10. (Repeat the count until all are participating.)

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Daily counting practice strengthens memory. When students move around the classroom for different purposes, have them count their steps up to 10, and then restart another count to 10.

Make a Line of 8 Beans (4 minutes)

Materials: (S) 5 red beans, 3 white beans

Note: During this fluency activity, circulate and watch students' counting strategies.

T: Put your red beans in a line. (Pause.) Count them. Let me hear you counting!

S: 1, 2, 3, 4, 5.

T: Put your white beans in a different line. (Pause.) Count them! Let me hear you counting!

S: 1, 2, 3.

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T: Move your line of white beans to the end of your line of red beans to make one long line of beans.
T: Touch and count to find out how many beans are in your line now.
S: 1, 2, 3, 4, 5, 6, 7, 8.

Show students the numerals from 1 to 8. Ask them which one shows the number 8.

Application Problem (4 minutes)

Materials: (T) 1–5 white board or poster from Module 1 Lesson 22, 6–7 white board or poster from Lesson 8, 8 apples (Template 1), magnetic numerals 1–8

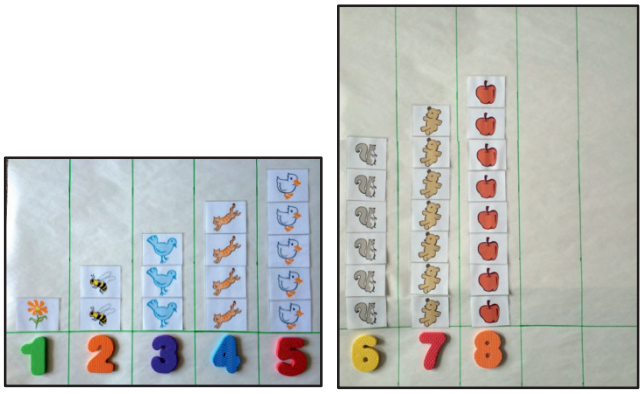
Gather children in a circle. Say the following rhyme, gesturing to each object on the chart:

One little flower, 2 little bees,
3 little birds in a tree.
Nice warm sun shines down on me.
I can count! 1, 2, 3.

Four little kittens come out to play,
On this warm and sunny day.
Five little ducks take a dive.
Count them: 1, 2, 3, 4, 5.

Six little squirrels, quick as can be,
Climbing up the old oak tree.
In its shade sit 7 chairs,
1, 2, 3, 4, 5, 6, 7 bears.

Eight little apples up in the tree,
Some for you and some for me.



Pass out the magnetic numerals 1–8. Ask, for each number, "Who has the number to show how many flowers there are? How many bees?" continuing up to "How many apples?" Have students put the magnetic numerals on the chart to match. Say, "Clap once when I touch the number 8." Point to each number in order from 1. The students should be completely silent to encourage internal counting, clapping only once when the number 8 is touched.

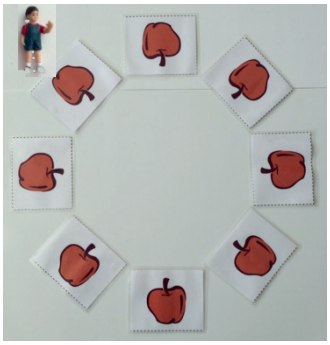
Note: In Topics E and G, numbers 9–10 are be added to this chart. Select a white board that can be used for this purpose for several days and leave space on the right side for the additions. Alternatively, use chart paper and objects and numerals with tape on the back.

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Concept Development (12 minutes)

Part 1: Concept Introduction

Materials: (T) Magnetic numerals 6–8, 8 apples (Template 1), 1 small doll, crown picture (Template 2)



1. Take the apples off the board, and put them in a circle. Say, "These apples are on the table for a tea party. Let's count how many apples are on the table." Touch and count each apple. Instead of stopping at 8, continue around the circle until students notice a problem.

MP.2

2. Ask students for ideas about how to count things in a circle. Support them as they remember how to mark the start. Repeat the count, perhaps using the small doll to mark the start of the count.
3. Ask children, "Point to the number that shows how many apples are on the table." Ask them, "This number? This number?"
4. Display the crown of apple blossoms. Say, "This is a crown for someone to wear at the tea party. How many apple blossoms are on the crown?" Call a student forward to touch and count each blossom. Show the student how to make a dot on the first blossom with a crayon to mark the start of the count.



Part 2: Practice

Materials: (S) Per pair: numeral cards 6–8 (Lesson 6 Template 2 cut apart), small resealable bag containing circular configuration cards (Template 3, cut apart), sticker or linking cube (to mark start)

1. Match students with a partner, and tell them, "Let's play school! One of you will be the teacher, and one of you will be the student."
2. Say, "Teachers, pick a bag and choose a card. Ask your student how many things are in the circle."
3. After students have done so, say, "Teachers, find the number that matches."
4. Students switch roles, repeating Steps 2–4.
5. Circulate among groups and support as necessary. In particular, watch to see if students are marking a starting point for the count and if they realize the marked object is the first object counted and does not get recounted at the end of the count.

Student Debrief (3 minutes)

Lesson Objective: Count 8 objects in circular configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

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As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

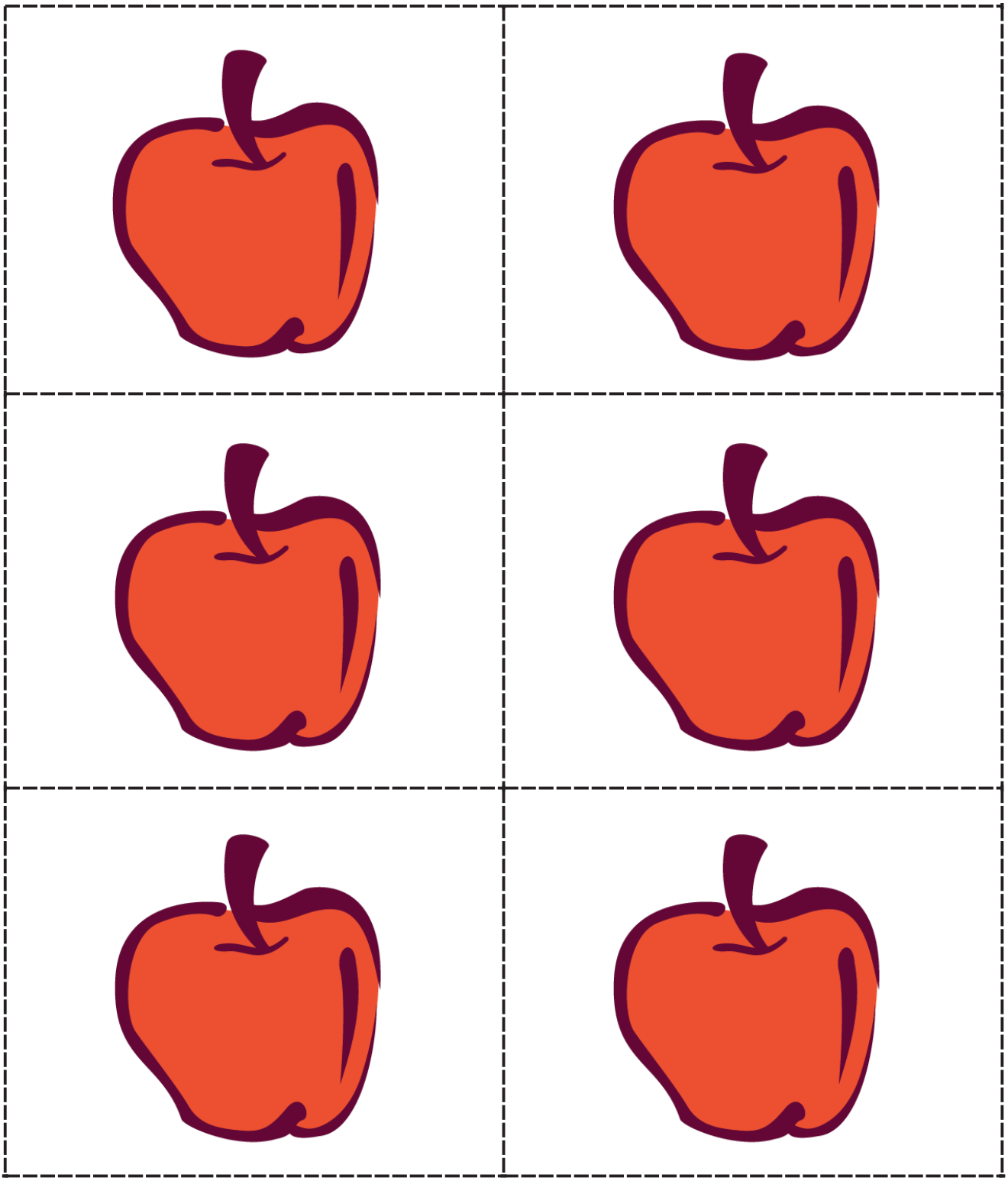
Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- How can you remember where you started counting on the circle?
- Is it easier to count 8 things in a line or 8 things in a circle? Why?
- (Place a set of 8 objects in a circular configuration on the floor.) My friend Jason says that there are 5 objects in this circle. How can we find out if he is right? (Work as a group to count and check.)

CENTER CONNECTION:

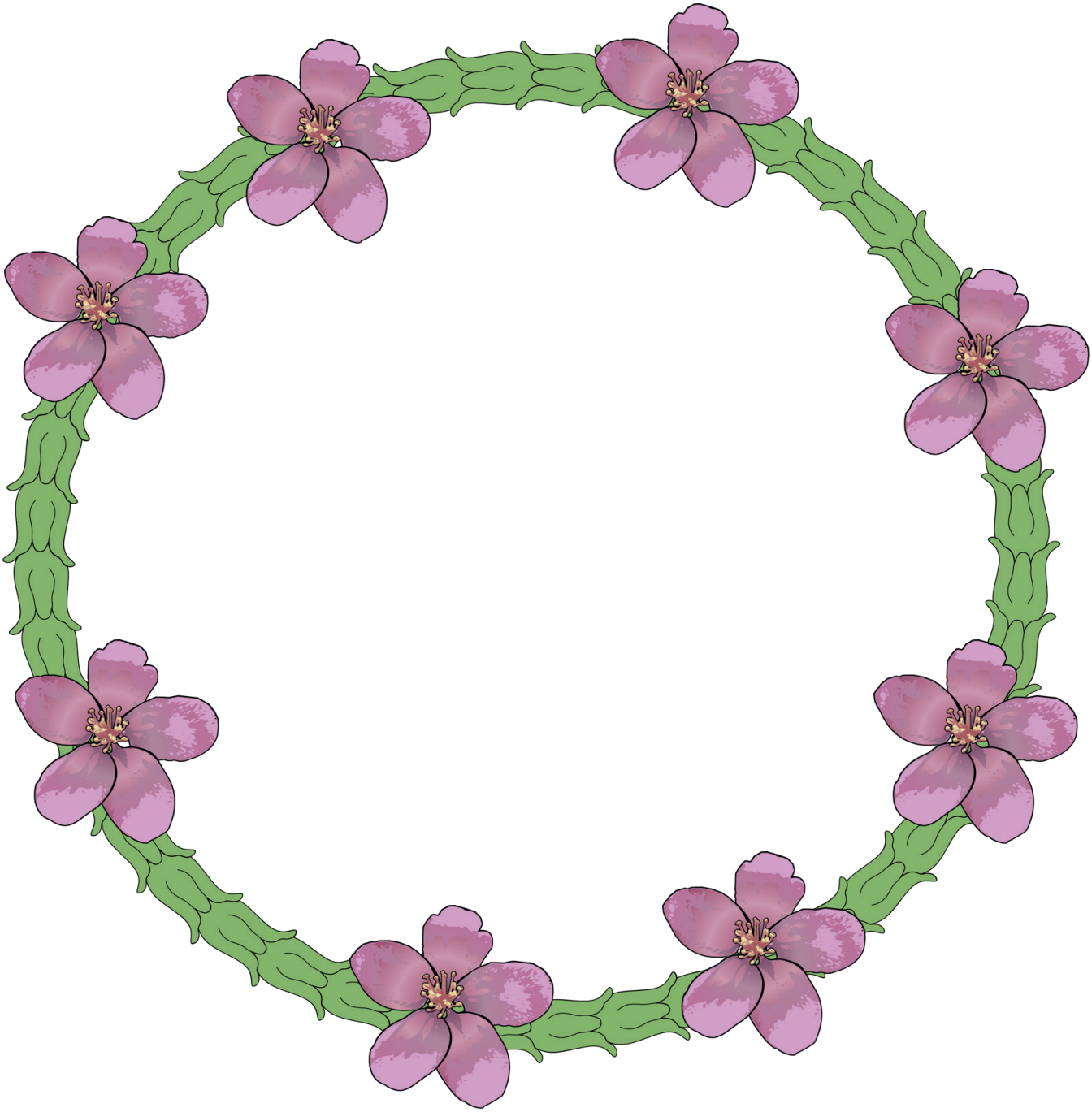
Make crowns (either apple blossom or jeweled king and queen crowns) in the art center to practice counting up to 8 in a circular configuration. Use a sentence strip or a long piece of construction paper to make the crowns. Give children up to 8 medium pieces of tissue paper to crumple into flowers or jewels to glue on the crown. Help them find ways to mark the start of their count once the flowers or jewels are glued to the crown.

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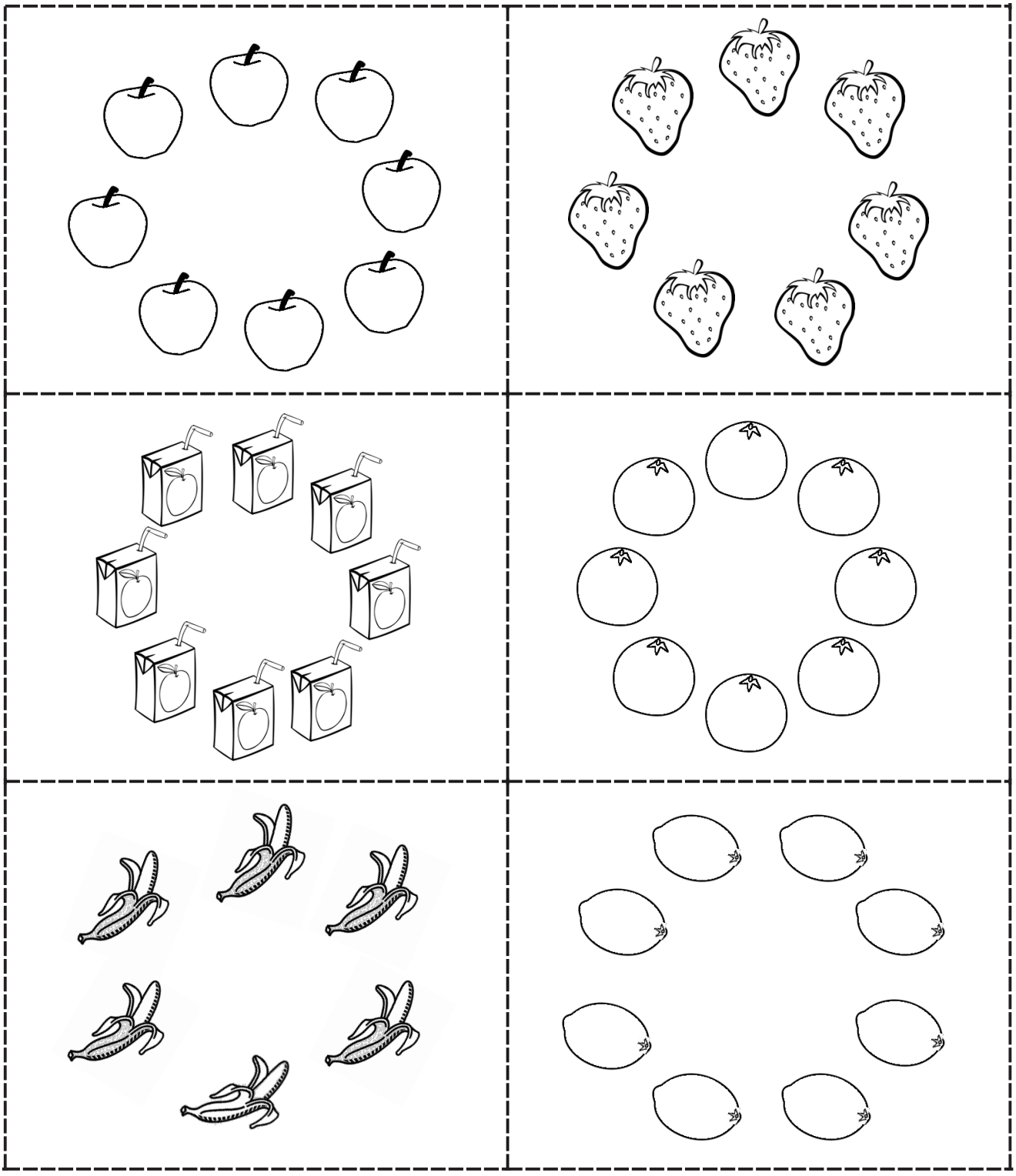
8 apples

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crown picture

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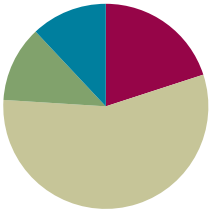
circular configuration cards

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Lesson 18

Objective: Arrange and count 8 objects in varied configurations.

Suggested Lesson Structure



Fluency Practice	(5 minutes)
Application Problem	(3 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (5 minutes)

- Clap, Stomp, and Count to 10 **PK.CC.1** (3 minutes)
- Touch and Count to 8 **PK.CC.3a** (2 minutes)

Clap, Stomp, and Count to 10 (3 minutes)

Note: Rote counting to 9 and 10 prepares students for the objective of touching and counting to 10 in the second half of Module 3.

T: Let's clap 9 times and count our claps! Join in when you are ready. 1, 2, 3, 4, 5, 6, 7, 8, 9. (Repeat until most students are either clapping, counting, or ideally, both clapping and counting. Pause between counts.)

T: Let's stomp 9 times and count our stomps! 1, 2, 3, 4, 5, 6, 7, 8, 9. (Follow the same process as above.)

T: Let's clap 10 times and count our claps! 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

T: Let's stomp 10 times and count our stomps! 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Touch and Count to 8 (2 minutes)

Materials: (S) Tower of 8 (5 cubes one color, 3 another color)

Note: This fluency activity focuses on counting to 8 in anticipation of introducing the number 9 as 8 and 1 more in Topic E. By using the color change after the fifth cube, the number 8 becomes more accessible, composed of two familiar numbers. In this activity, however, the composition of the parts is not analyzed, as students simply count past the color change to 8.

T: Touch and count the cubes in your stick. Use a whisper voice for the bottom color and a big voice for the top color.

S: (Whisper voice) 1, 2, 3, 4, 5, (big voice) 6, 7, 8.

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T: Touch and count again, and use a big voice for the bottom color and whisper voice for the top color.
S: (Big voice) 1, 2, 3, 4, 5, (whisper voice) 6, 7, 8.
T: This time use a growling voice for the bottom color and a high voice for the top color.
S: (Growling voice) 1, 2, 3, 4, 5, (high voice) 6, 7, 8.

Show them the numerals 1–8, and ask them to say, "That's 8," and trace the shape in the air with their fingers when the numeral 8 is pointed out.

Application Problem (3 minutes)

Materials: (S) Paper plate, 8-stick from Fluency Practice

As they did before, instruct the students to pretend each cube in their 8-stick is a friend waiting in line to go on a merry-go-round. Have them move their friends from the line onto the merry-go-round (the paper plate). Have them count their friends. Direct them to gently turn their plate as the merry-go-round starts to move. Direct them to stop the turning, and then have them put the friends in a line again and recount.

Note: This fluency activity gives students additional practice counting in a circular formation. The color change may make it easier, but they still must determine whether or not to include the starting cube in the count. Take note of this possible point of confusion. There are 8 cubes, not 9.

Concept Development (14 minutes)

Part 1: Concept Introduction

Materials: (T) Green construction paper, 8 seeds, numeral card 8 (Lesson 6 Template 2), white board or chart paper

Note: Choose seeds that are large enough for the whole group to see (e.g., sunflower, lima bean, nasturtium).

1. Gather students in a circle around the green construction paper. Say, "Maria and her neighbors want to plant flowers in the community garden. Maria brings 5 seeds to the garden." Enlist students to help count out 5 seeds and line them up on the mat.
2. Say, "Maria's three neighbors each bring a seed to the garden." Add the neighbors' seeds below the line of 5 seeds (5-group configuration), having students count the number of seeds. Find the matching numeral (8) after the 3 seeds are added.
3. Say, "Maria and her neighbors have different ideas about how the seeds should be planted. Maria likes having her seeds in 1 line and the neighbor's seeds in another." Draw Maria's idea on the white board, and label it. Have children count the seeds in the drawing from left to right and top to bottom to make sure there are 8.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Differentiate this task as necessary for individual students. Those who are ready could be given a larger range of numeral cards to choose from when matching the numeral to the number of seeds (e.g., numerals 1–9). Students who are struggling with number recognition could have a smaller set of numeral cards (two numeral choices).

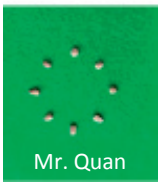




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4. Say, "Ms. Anan likes having 2 rows, but she wants the rows to have the same number." Move a seed from the top line to the bottom line to create an array. "Let's count both rows together (touch and count). How many seeds are there?" Draw Ms. Anan's idea, and label it.
5. Say, "Sammy thinks that the seeds should be in 1 line along the side of the yard, so he still has room to play." Have a student make 1 line of seeds, touching each seed while the class counts. Draw Sammy's idea, and label it.
6. Say, "Mr. Quan says that they should plant the seeds in a circle so he can sit and read in the middle of the garden." Have a student make a circle with the seeds, touching each seed while the class counts. Draw Mr. Quan's idea, and label it.

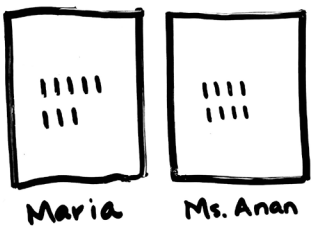


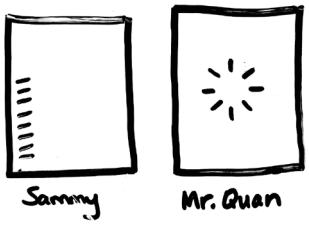


Part 2: Practice

Materials: (T) Garden idea drawings (S) Green construction paper, small resealable bag with 8 seeds and 8 small pieces of tissue paper, glue

1. Pair students and send them to tables with construction paper and a bag.
2. Invite students to choose their favorite garden idea and arrange their seeds to match. Encourage them to describe their seed layouts to their partners.
3. Instruct partners to take turns counting and asking *how many* questions about each other's seeds.
4. Have children choose a different way to place their seeds in lines or in circles. It can be one of the ideas in the drawings or their own idea. Again, instruct partners to take turns counting and asking a *how many* question. (Remember, counting in scattered configurations is to 5, not 10, in Pre-Kindergarten.)
5. If time permits, have children choose their favorite garden layout and arrange their seeds. Replace each seed with a drop of glue. Have children create flowers by crinkling their tissue paper and placing one flower on each drop of glue.





Student Debrief (3 minutes)

Lesson Objective: Arrange and count 8 objects in varied configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

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Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- (Display the four garden idea drawings.) How many different ideas did the neighbors have for the garden? What do you notice about the number of seeds in each drawing?
- (Display about 12 objects in a line. This question focuses on conservation rather than counting.) Are my objects in a line or in a circle? (Move them into a circle.) Is there the same number now? (Move them into a 2 by 6 array.) Is there the same number now?
- (Move the objects into a 3 by 4 array.) Is there the same number of objects now? (Remove 1 object.) Is there the same number of objects now?
- Wiggle your fingers on one hand. How many fingers are there? (Pause.) Make your hand into a fist. How many fingers do you have now on that hand? (Pause.) Hide your fist behind your back. How many fingers do you have now on that hand?

CENTER CONNECTION:

In the art center, have children pick one of the neighbor's seed layouts and show what the garden will look like when the flowers bloom. They can use paint, crayons, collage, or even clay to show their ideas. Have them count the seeds in the original drawing and the flowers in their final art work (they may not match).

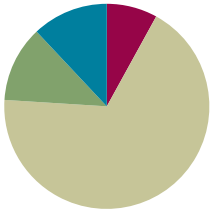
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Lesson 19

Objective: Tally 8 objects.

Suggested Lesson Structure

Fluency Practice	(2 minutes)
Application Problem	(3 minutes)
Concept Development	(17 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (2 minutes)

- March and Count to 9 and 10 **PK.CC.1** (2 minutes)

March and Count to 9 and 10 (2 minutes)

Note: Rote counting to 9 and 10 prepares students for the objective of touching and counting to 10 in the latter half of Module 3.

T: Let's march 9 times and count our steps! Join in when you are ready. 1, 2, 3, 4, 5, 6, 7, 8, 9. (Repeat until all are marching. Pause between counts.)

T: Let's march 10 times and count our steps! Join in when you are ready. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. (Repeat until all are marching. Pause between counts.)

Application Problem (3 minutes)

Materials: (S) Cup containing 3–8 bee stickers, numeral cards 3–8 (1 to match each cup, Lesson 6 Template 2)

Distribute a cup to each child, and spread the numeral cards in the center of the circle.

Say, "Today, we are going to be workers at a very special café for bees called the Pollen Café. Our customers will be bees! They will want pollen from the flowers that we serve. Let's get the bees ready. Find the number that tells how many bees are in your cup."

Circulate and make sure that students are lining up their bees and counting with one-to-one correspondence. Once children have found the correct numeral, have them place it in the cup with the bees.

Note: This Application Problem sets the context for the Concept Development. Create cups with 3–5 bees for students who are still mastering smaller numbers, but have 6–8 bees in most cups.

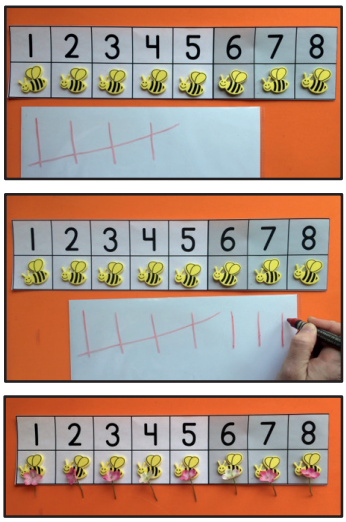
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Concept Development (17 minutes)

Part 1: Concept Introduction

Materials: (T) Cup containing 8 bee stickers, number path (Lesson 10 Template) folded to 8, paper and crayon (or white board), 8 flowers (S) Paper and crayon (or white board)

Note: Prepare students for this lesson by explaining what a chef, waiter, and customer do in a restaurant or café.



1. Select a child to bring the customers to the Pollen Café, the bees. Give him the cup of bees. Display the number path. Say, "Carefully put the customers in these special bee seats." Help student place 1 bee in each spot on the number path.
2. Ask, "How many bees did Noah seat in the Pollen Café?" Give students a moment to think before prompting the count. Touch and count along with the class. Use self-talk to point out the relationship between the count and the number path. "We counted 8 bees. Look! The last bee is sitting in the chair next to the number 8. That is the same as our count."
3. Say, "I'm going to be the waiter. I need to write down the order. I'll make a tally for each flower to show how many flowers I need to get." Direct eight students to place their order by saying, "May I have 1 flower please?" Tally the flowers as each one orders.
4. Demonstrate how to tally 8. Use the white board to draw tallies under the first 5 bees, and then make tallies beneath the last 3 bees (move the white board as needed). Have the children do the same on their papers or white boards.
5. Say, "Now, the waiter is ready to take the order to the chef!" Take out the "order" of 8 flowers. Children count the flowers with the teacher, who gives each bee a flower as students count. Demonstrate as in Step 4 for students who need to see another model of tallying.

Part 2: Practice

Materials: (S) cup containing 3–8 bee stickers, number path (Lesson 10 Template) folded to 8, paper and crayon (or white board)

Assign each student to be either the person to seat the bees or a waiter. Distribute the appropriate materials.

1. Have one partner seat the bee customers from the cup on their number path. Have the waiters tally the flower orders, 1 per bee.
2. Support waiters as they tally the order. Encourage the other partner to count the tally to make sure it matches the order.
3. Have children switch roles and repeat with a new cup of bees, ensuring that everyone has a chance to practice making tally marks.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Assigning roles to students is a way to differentiate instruction. For example, assign students who need practice with one-to-one correspondence to seat the customers. The role of waiter could be assigned to students who need more practice with tally marks.

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Student Debrief (3 minutes)

Lesson Objective: Tally 8 objects.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- What tools did we use today to count to 8?
- (Display an example of student work from the Practice including the number path, bees, and tally.) How could these tally marks help the waiter remember how many flowers to get in the kitchen?
- How does the number path help us see that 5 and 3 more is 8? MP.7
- How do our *tallies* help us see that 5 and 3 more is 8?
- (Show the number path with the color change at 5.) How does the color change on the bees' seats match the tally mark that goes across?

CENTER CONNECTION:

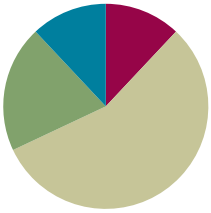
Set up the Pollen Café in the dramatic play center. Make sure students take turns seating customers and being waiters so everyone has a chance to practice tallying. Prepare a few bags with flowers (3–8 to match the bees), and include the matching numeral. Waiters can deliver the flowers to the customers.

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Lesson 20

Objective: Look at a numeral and count out a group of up to 8 objects.

Suggested Lesson Structure



Fluency Practice	(3 minutes)
Concept Development	(14 minutes)
Application Problem	(5 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (3 minutes)

- Balance and Count to 9 and 10 **PK.CC.1** (3 minutes)

Balance and Count to 9 and 10 (3 minutes)

Note: Rote counting to 9 and 10 prepares students for the objective of touching and counting to 9 and 10 in Topic E.

T: Let's stand on one leg and count to 9. Ready? 1, 2, 3, 4, fiiiiive, 6, 7, 8, 9. (Repeat until most chidren are able to balance the whole time. Have some laughs by slowing down or speeding up the count and at times dragging out the *fiiiive* more or less!)

T: Let's stand on the other leg and count to 9. Ready? 1, 2, 3, 4, 5, 6, 7, 8, 9. (Follow the same process as above.)

T: Let's stand on the other leg again and count to 10. Ready? 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

T: Let's stand on the other leg and count to 10. Ready? 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Concept Development (14 minutes)

Part 1: Concept Introduction

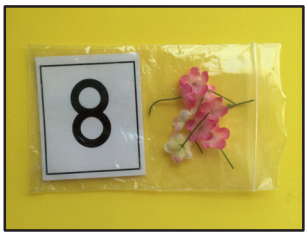
Materials: (T/S) Cup of 10 flowers, small resealable bag containing the numeral card 8 (Lesson 6 Template 2)



1. Tell students that today the chefs at the Pollen Café must prepare bags of flowers for their customers. They have to count out the right number of flowers for each bag.

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2. Invite children to take the numeral cards out of their bags. Ask all students to name the number and trace it with a finger. Ask, "How many flowers do we need for this bag?" Guide children to respond, "8 flowers!"
3. Dump the flowers from the cup. Count out the correct number of flowers using self-talk to describe your thinking, "I'll make a line of 8 flowers for this bag. I'll count and stop when I get to 8. 1 flower, 2 flowers, … , 8 flowers (place eighth flower in line). Stop." MP.7
4. Ask students to count and make sure the flowers match the numeral card. Put the flowers in the bag.
5. Invite children to count out their own line of 8 flowers. Encourage children to say, "Stop!" when they hear the target number. If children are not able to count and keep the target number in their mind, let them use the number path folded at 8.



Part 2: Practice

Materials: (S) Cup of 8 flowers, bag containing one numeral card 3–8 (Lesson 6 Template 2)

1. Distribute one order (one bag) to each chef. If students have not yet mastered counting to 8 with one-to-one correspondence, let them practice making groups with smaller numbers.
2. Tell the chefs to say how many flowers are being ordered (the number in their bag) and to trace it with a finger.
3. Have the chefs count out a line of flowers to match their order. Encourage students to use the dots on the back of the cards if they need to match one-to-one to make a group.
4. When they have correctly completed an order, the chefs may get another order and repeat Steps 2 and 3, reusing the same flowers.
5. As students work, circulate and describe what they are doing using parallel talk (e.g., "Anu's order had the number 6, so she is counting out 6 flowers. Mikey stopped putting flowers in the line when he got to 8.")

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Provide challenging extensions for students who are ready to work with larger numbers. Students who are ready could make sets of bees to 10.

Application Problem (5 minutes)

Materials: (T) Cup containing 3–8 bee stickers (S) Waiters: number path (Lesson 10 Template) folded to 8, paper and crayon or white board and dry erase crayon; Chefs: 10 flowers

Select two children to play the roles of waiter and chef. While leading these students through the role play, look for ways to bring other students into the action, and assure them that they will have a chance to play in the dramatic play center. Walk students through the following steps:

- Step 1: Place the bees in their seats on the number path.
- Step 2: *Waiter* makes tally marks to show the number of flower orders and takes order to the chef.

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- Step 3: *Chef* fills the flower order.
- Step 4: *Waiter* checks to see that the chef counted the right number of flowers and takes the flowers to the seated bees.

Note: In this activity, children combine their ability to count with one-to-one correspondence, tally, and count out a group of up to 8 objects. Giving children the opportunity to use their newly learned skills in a real world context provides meaning and motivation for their learning.

Student Debrief (3 minutes)

Lesson Objective: Look at a numeral and count out a group of up to 8 objects.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Could you add as many flowers as you wanted to your order? How did you know when to stop putting more flowers in the order?
- (Show 8 flowers, 8 tallies, the dot configuration for 8, and the numeral 8.) Which of these tells how many flowers I have? (Help students realize that all of these represent 8.)
- (Show a bag of pretzels.) If I asked you to give 8 pretzels to your friend, how would you do it?

CENTER CONNECTION:

Continue to set up the dramatic play center as Pollen Café. As children play today, have the chefs create a group of flowers based on the tallies brought by the waiter instead of relying on prepared bags.

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Pre-Kindergarten Mid-Module 3 Assessment Instructions (Administer after Topic D)

Purpose: These assessments inform daily planning, enhance parent conferences with specific documentation of students' skill development, and provide valuable information about a student to his next teacher.

Materials Needed: 5 red and 3 yellow linking cubes, as pictured on each page, 10 small rocks, paper clip, numeral cards 1–8, paper plate

Preparation: This may be a Pre-Kindergarten student's first assessment experience, so it is critical to make it a positive one. Greet the child warmly, and sit beside her rather than opposite. Tell the child that it is time to play some number games.

Procedure: Use the specific language of the assessment, translating as necessary for non-English speakers. Use the second hand of the classroom clock to assure there is ample wait time, and note when there is a significant delay (i.e., more than 20 seconds) in response. Record the student's results in two ways: (1) the narrative documentation and (2) the overall score per topic. It is key to allow the child to explain his reasoning in his primary language.

Initial Assessment: Use the rubric to determine at what step the student is performing.

STEP 1 Little evidence of reasoning without a correct answer. (1 Point)	STEP 2 Evidence of some reasoning without a correct answer. (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)

If the student is unable to get the correct answer on any part of the assessment, his score cannot exceed Step 3. However, if the student is unable to use his words to explain what he did, do not count that against him quantitatively. (Be aware of the difference between a native English speaker's and a non-English speaker's ability to articulate something.) If the student asks for or needs a hint or significant support, provide either, but automatically lower the score. This is to ensure that the assessment provides a true picture of what a student can do independently.

Repeated Assessment: If a student scores at Step 1 or 2, repeat that task at two-week intervals, noting the date of the reassessment in the space at the top of the student's record sheet. Document progress on this form. If the student is very delayed in his response but completes it, reassess after two weeks to see if there is a change in the time elapsed.

Documentation Availability: Keep the assessments in a three-ring binder or student portfolio. There are two assessments (mid and end) per module for each student. Use the Class Record Sheet following the rubric for an at-a-glance look at students' strengths and weaknesses and follow-up lesson planning.

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	Date 1	Date 2	Date 3
Topic A			
Topic B			
Topic C			
Topic D			

Student Name _____

Topic A: *How Many* Questions with up to 7 Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 7 small rocks, 7-stick of linking cubes with 5 red and 2 yellow

1. (Put 6 small rocks in a straight horizontal line.) Touch and count the rocks.
2. Put one more rock on the end of the line. How many are there?
3. (Change the rocks for a linking cube stick of 6 cubes with 5 red and 1 yellow.) Count the cubes. How many are there?
4. (Break the stick into 2 threes. Arrange them as two rows.) Count the cubes. How many are there?
5. (Put the stick back together.) Put one more yellow cube on the yellow end. How many cubes are there now?

Note: If a child is unable to count 7 objects with one-to-one correspondence (one object paired with one number word), ask him to rote count to 7. Rote counting (**PK.CC.1**) is a precursor to counting with one-to-one correspondence (**PK.CC.3a**).

What did the student do?	What did the student say?
1. 2. 3. 4. 5.	

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Topic B: Matching One Numeral with up to 7 Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 7 linking cubes of the same color, 10 small rocks, paper plate, paper clip, numeral cards 1–7

1. (Arrange 6 linking cubes in a circle around the rim of a plate.) Touch and count the cubes. How many cubes are there? You may use the paper clip if it will help you count.
2. (Display the numerals 1, 2, 3, 4, 5, 6, and 7 scattered and out of order on the table.) Hand me the number that shows the number of cubes on the plate.
3. (Arrange 7 linking cubes in a circle around the rim of a plate.) Touch and count the cubes. How many cubes are there? You may use the paper clip if it will help you count.
4. (Remove the linking cubes, and place 10 small rocks in a scattered configuration on the plate. Show the numeral 7.) Put this number of rocks in a straight line.

What did the student do?	What did the student say?
1.	
2.	
3.	
4.	

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Topic C: *How Many* Questions with up to 8 Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 8 small rocks, 8-stick of linking cubes with 5 red and 3 yellow, paper plate

1. (Put 7 small rocks in a straight horizontal line.) Touch and count the rocks. How many are there?
2. (Put one more rock at the end of the line.) How many are there now?
3. (Exchange the 8 rocks for a linking cube stick of 8 cubes with 5 red and 3 yellow.) Count the cubes. How many are there?
4. (Break the stick into 4 twos. Arrange them as 4 rows.) Count the cubes. How many are there?
5. (Put the stick back together.) How many cubes are there now?

Note: If a child is unable to count 8 objects with one-to-one correspondence (one object paired with one number word), ask her to rote count to 8. Rote counting (**PK.CC.1**) is a precursor to counting with one-to-one correspondence (**PK.CC.3a**).

What did the student do?	What did the student say?
1. 2. 3. 4. 5.	

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Topic D: Matching One Numeral with up to 8 Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 8 linking cubes of the same color, paper plate, paper clip, numeral cards 1–8

1. (Arrange 8 linking cubes in a circle around the rim of a plate.) Touch and count the cubes. How many cubes are there? You may use the paper clip if it will help you count.
2. (Display the numerals 1, 2, 3, 4, 5, 6, 7, and 8 scattered and out of order on the table.) Hand me the number that shows the number of cubes on the plate.
3. (Remove the linking cubes, and place 10 small rocks in a scattered configuration on the plate. Show the numeral 8.) Put this number of rocks in a straight line.

What did the student do?	What did the student say?
1.	
2.	
3.	

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Mid-Module Assessment Task Standards Addressed	Topics A–D

Know number names and the count sequence.

PK.CC.1 Count to 20.[1]

Count to tell the number of objects.

PK.CC.3 Understand the relationship between numbers and quantities to 10; connect counting to cardinality.

a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

c. Understand that each successive number name refers to a quantity that is one larger.

PK.CC.4 Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects.

Evaluating Student Learning Outcomes

A Progression Toward Mastery is provided to describe steps that illuminate the gradually increasing understandings that students develop on their way to proficiency. In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for students is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the students CAN do now and what they need to work on next.

[1]PK.CC.1 is assessed directly if a child is not able to demonstrate mastery of PK.CC.3a, since rote counting is embedded in counting with one-to-one correspondence.

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A Progression Toward Mastery				
Assessment Task Item	**STEP 1 Little evidence of reasoning without a correct answer. (1 Point)**	**STEP 2 Evidence of some reasoning without a correct answer. (2 Points)**	**STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)**	**STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)**
Topic A **PK.CC.1** **PK.CC.3abc** **PK.CC.4**	The student shows little evidence of understanding how to count objects in any configuration, does not understand cardinality, is unable to count from 1 to 7 with one-to-one correspondence, and does not understand that 1 more yields the next number.	The student shows evidence of beginning to understand how to count objects in a line or in an array but has some difficulty understanding cardinality or counting with one-to-one correspondence (says more than one number for each object or skips an object). The student does not understand that 1 more yields the next number.	The student does two of the following: ▪ Arranges and counts cubes in linear and array configurations correctly to 6 and 7. ▪ Understands cardinality. ▪ Counts with one-to-one correspondence. ▪ Understands 6 and 1 more is 7.	The student correctly: ▪ Arranges and counts cubes in linear and array configurations correctly to 6 and 7. ▪ Understands cardinality (the last number said tells the number in a set). ▪ Counts with one-to-one correspondence (one object paired with one number word). ▪ Understands 6 and 1 more is 7.
Topic B **PK.CC.3ab** **PK.CC.4**	The student shows little evidence of understanding how to match a numeral to a quantity or is unable to make a group of a particular quantity. He is unable to explain the process.	The student shows evidence of beginning to understand how to match a numeral to a quantity or how to create a group of a particular quantity.	The student demonstrates some understanding but inaccurately or inconsistently does the following: ▪ Counts up to 7 objects in a circular configuration. ▪ Matches the numeral 6 to the corresponding quantity. ▪ Creates a set of objects to match the numeral 7.	The student correctly: ▪ Counts up to 7 objects in a circular configuration. ▪ Matches the numeral 6 to the corresponding quantity. ▪ Creates a set of objects to match the numeral 7.

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A Progression Toward Mastery				
Topic C **PK.CC.1** **PK.CC.3abc** **PK.CC.4**	The student shows little evidence of understanding how to count objects in any configuration, does not understand cardinality, is unable to count from 1 to 8 with one-to-one correspondence, and does not understand that 1 more yields the next number.	The student shows evidence of beginning to understand how to count objects in a line or array but has some difficulty understanding cardinality or one-to-one correspondence (says more than one number for each object or skips an object). The student does not understand that 1 more yields the next number.	The student does two of the following: ▪ Arranges and counts cubes in linear and array configurations correctly to 8. ▪ Understands cardinality. ▪ Counts with one-to-one correspondence. ▪ Understands 7 with 1 more is 8.	The student correctly: ▪ Arranges and counts cubes in linear and array configurations correctly to 8. ▪ Understands cardinality (the last number said tells the number in a set). ▪ Counts with one-to-one correspondence (one object paired with one number word). ▪ Understands 7 with 1 more is 8. ▪
Topic D **PK.CC.3ab** **PK.CC.4**	The student shows little evidence of understanding how to match a numeral to a quantity or is unable to make a group of a particular quantity. She is unable to explain the process.	The student shows evidence of beginning to understand how to match a numeral to a quantity or how to create a group of a particular quantity.	The student demonstrates some understanding but inaccurately or inconsistently does the following: ▪ Counts up to 8 objects in a circular configuration. ▪ Matches the numeral 8 to the corresponding quantity. ▪ Creates a set of objects to match the numeral 8.	The student correctly: ▪ Counts up to 8 objects in a circular configuration. ▪ Matches the numeral 8 to the corresponding quantity. ▪ Creates a set of objects to match the numeral 8.

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Class Record Sheet of Rubric Scores: Mid-Module 3 Assessment					
Student Names	**Topic A: *How Many* Questions with up to 7 Objects**	**Topic B: Matching One Numeral with up to 7 Objects**	**Topic C: *How Many* Questions with up to 8 Objects**	**Topic D: Matching One Numeral with up to 8 Objects**	**Next Steps:**

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Topic E

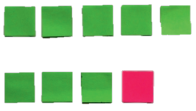
How Many Questions with 0 up to 9 Objects

PK.CC.1, PK.CC.3abc, PK.CC.4

Focus Standards:	PK.CC.1	Count to 20.
	PK.CC.3abc	Understand the relationship between numbers and quantities to 10; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. c. Understand that each successive number name refers to a quantity that is one larger.
	PK.CC.4	Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1-10, count out that many objects.
Instructional Days:	5	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

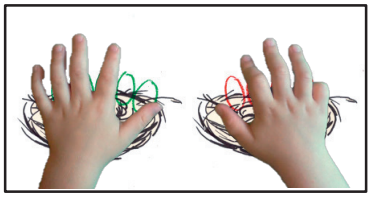
Topic E opens with an exciting new number, zero. Children easily understand *none* and *nothing* when used in a meaningful context: "I ate all of my crackers. There are none left." In Lesson 21, children learn to describe *nothing* numerically, "I have 0 crackers." The concept of 0 is deceptively simple. It is easy to work with and understand, but initially, it is not entirely clear to the student why it is needed. Therefore, its introduction is delayed until students have sufficient familiarity with the number core to understand this new level of abstraction. It is introduced prior to 10 since the numeral is used within 10 (in Grade 1 Module 2, 10 is understood as 1 ten and 0 ones).

The remaining Topic E lessons continue the pattern established in Topics A and C. Lesson 22 begins with students counting out 8 grapes, represented by square inch tiles. They add *1 more* piece of fruit (a blueberry) and then touch and count 9 pieces of fruit (**PK.CC.3c**). Once all of the fruit is eaten, children count 0 pieces of fruit.



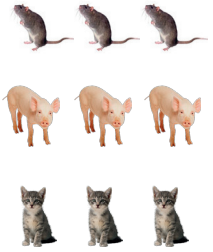
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Lesson 23 explores 9 in relation to 5 by returning to the context of the explorer crossing the creek, familiar from the first half of the module. As this context moves forward, it gains in depth. For example, during the Debrief, students might observe the difference in the size of the rocks when using 9 rocks as opposed to when using 7 rocks to cross the creek. This mathematically important observation hints at the Kindergarten through Grade 5 theme that the smaller the unit, the more units necessary to make an equivalent amount (e.g., 10 ones = 1 ten, 3 feet = 1 yard, $\frac{2}{4} = \frac{1}{2}$).



In Lesson 24, children count the Math Way from 0 to 9. Again, students make lines on the Problem Set to show the chicks that have hatched in each nest. They also use their fingers to count how many as each "chick" (finger) hatches and stands.

In Lesson 25, children work with arrays, counting storybook characters in groups of 3. They start with 3 blind mice and then place 3 little pigs in a row beneath to create a 2 by 3 array. Finally, they add 3 little kittens to another row, counting to 9 in a 3 by 3 array from left to right and top to bottom.



Throughout Topic E, children develop fluency with one-to-one correspondence as they count to 9 while marching, clapping, or flapping. They continue to make groups of up to 8 objects, now including 0 as an option, especially when the wind blows all the "trees" (dominoes) down.

A Teaching Sequence Toward Mastery of *How Many* Questions with 0 up to 9 Objects

Objective 1: Introduce zero. (Lesson 21)

Objective 2: Introduce 9, and relate 9 to 8 and *1 more*. (Lesson 22)

Objective 3: Use linear configurations to count 9 in relation to 5. (Lesson 23)

Objective 4: Count from 0 to 9 from left to right with fingers. (Lesson 24)

Objective 5: Count 9 objects in array configurations. (Lesson 25)

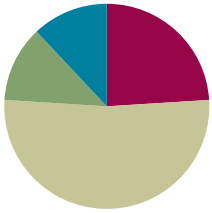
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Lesson 21

Objective: Introduce zero.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Count Flaps to 9 **PK.CC.1** (2 minutes)
- The Wind and the Trees! **PK.CC.1** (4 minutes)

Count Flaps to 9 (2 minutes)

Note: This fluency activity prepares students for tomorrow's lesson involving touching and counting to 9. If the majority of students struggle with the coordination of flaps and counts to 9, start at a smaller number and build up to 9. Keep it playful!

T: Let's pretend we are baby birds who are so proud to learn how to flap our wings that we count our flaps. Let's flap and count to 9. Ready? 1, 2, 3, 4, 5, 6, 7, 8, 9. (Repeat the process until students better coordinate one flap with one count.)

The Wind and the Trees! (4 minutes)

Materials: (T/S) Small resealable bag with 5 manipulatives (e.g., blocks or dominoes)

Note: This fluency activity prepares students for the Concept Development that introduces zero by having them eat goldfish crackers until there are none left.

T: Let's pretend our blocks are trees. Let's stand our trees up in a row. Have the flat side face you. Count them.

T: How many trees are standing up?

S: 5.

T: Let's pretend a big wind came and knocked 1 down. (Pause, and then knock one down.) Count how many are still standing.

S: 4.

Repeat until there are no trees standing. The word "zero" is formally introduced in the Concept Development. Here, the teacher might say, "The wind knocked down all the blocks."

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Application Problem (3 minutes)

Materials: (S) 8 dominoes

Tell students that if the wind blows over one tree, that can make all the trees fall down. How could that happen? Let them experiment, and then show them if necessary. Emphasize that there are no trees standing after they all fall down!

Note: This Application Problem naturally leads students to experience "no trees" or "none" before assigning this quantity a number, zero.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) 5 inflated balloons (or balloon cut-outs)

1. Gather students in a circle, and show them the balloons. Ask students to count the balloons, "1, 2, 3, 4, 5 balloons!" Tell them, "Imagine it's a windy day. The wind came along and blew 1 balloon away!"
2. Have students blow as the teacher moves one balloon into hiding as if they are blowing it. Ask students, "How many balloons did not blow away?" "4." Continue until no balloons are left.
3. Ask students, "How many balloons are left?" "When there are no more left, we answer '**zero.**' 0 is the number that means 'none.'"
4. Tell students, "Let's pretend Sara, Leonhard, and Mayumi are fish. Let's count as they swim away one by one." As each student swims away, guide the class to count, "3 fish, 2 fish, 1 fish, 0 fish!"
5. Ask, "How many are left after they all swim away?" "Zero."
6. Invite students to suggest scenarios. For example, invite 4 leaves to blow away as the class counts, or invite 2 crayons to roll away. Repeat until all students have had a chance to participate in the play-acting.

Part 2: Practice

Materials: (S) Underwater mat (Lesson 9 Template 1), 3 goldfish crackers

Note: Based on students' dietary needs or food allergies, adjust the materials as needed. A possible substitute for the goldfish crackers could be paper or plastic fish counters, which children can hide instead of eating.

1. Send students to prepared tables. Ask them to count their goldfish, "1 goldfish, 2 goldfish, 3 goldfish."

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Give students an opportunity to share real life experiences they have had with the newly introduced term zero. Making connections to their own experiences or hearing others' experiences supports comprehension of new vocabulary.

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2. Say, “We are going to catch each fish one at a time and eat them up!” Guide students to say how many goldfish they still have each time one is eaten: “3 goldfish, 2 goldfish, 1 goldfish.”
3. Say, “There are no goldfish left. How many goldfish are left?” Guide students to say, “Zero. 0 goldfish!”

Student Debrief (3 minutes)

Lesson Objective: Introduce zero.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child’s progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**zero**).

- (Show 2 blue cubes.) How many cubes are blue? Yellow? Green?
- How many flying elephants with green shoes are there in our class right now?
- What else is there **zero** of in our classroom? In your house?

CENTER CONNECTION:

Have students look around their center to answer the question, “What is there zero of in this center?” Have them use complete sentences. For example, “There are zero couches in the art center.”

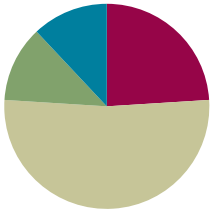
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Lesson 22

Objective: Introduce 9, and relate 9 to 8 and *1 more*.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Count Claps from 0 to 9 **PK.CC.1** (2 minutes)
- Decompose 8 **PK.CC.3ab** (4 minutes)

Count Claps from 0 to 9 (2 minutes)

Note: Counting claps from 0 to 9 prepares students for the upcoming objective of touching and counting to 9 in the lesson and contextualizes zero in the count sequence. Be aware that many students clap by mistake on zero. Keep it fun and playful: "Oops! There weren't any claps to count yet! Ha-ha! Let's try again."

T: We are going to count to 9. I'm going to say a number, and we are going to clap that many times.
T: Zero.
S: (Claps zero times.)
T: One.
S: (Claps one time.)
T: Two.
S: (Claps two times.)

Continue with the counting sequence to 9. Continue the activity, replacing claps with flaps (the same process as above.)

Decompose 8 (4 minutes)

Materials: (S) 5 loose cubes of one color and 3 of another color

Note: Moving forward from Lesson 18, this fluency activity focuses on decomposing 8 into a tower of 5 and 3. Observe the students. Notice who counts the number of cubes in each part. While circulating, whisper, "How many cubes are in this short tower? How many cubes are in this one?"

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T: Open your bags, and make one tall tower with all the cubes of one color touching. (Students do so.)
T: Count the number of cubes in your tall tower. (Students do so.)
T: Break your tower into parts by color. (Students do so.)
T: Put your tall tower back together. (Students do so.)

Application Problem (3 minutes)

Materials: (T) 8 small potatoes, shopping bag

Tell students that the class is going to make its own french fries. "Let's count how many potatoes I'll need to slice." Say the *One Potato, Two Potato* rhyme from Lesson 12 while touching and counting 7 potatoes.

One potato, two potato,
Three potato, four,
Five potato, six potato,
Seven potato, more.

Ask, "What does *more* mean?" Add another potato to the group. Say, "What is 7 and *1 more*? Let's count!" Variations on this task can include each child holding a potato and saying a part of the rhyme (e.g., "Three potato") when it is his turn.

Note: This task serves as a lead-in to today's Concept Development, where children relate 8 and 1 more to 9.

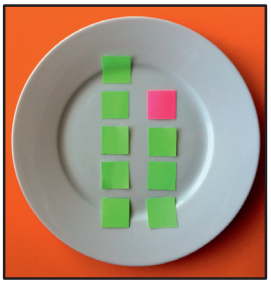
Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Plate, 8 grapes, and 1 blueberry

1. Show students the plate and say, "Let's have some fruit for a snack. Here's a plate to put our fruit on. How many pieces of fruit are on the plate?" Help students respond, "0."
2. Say, "Count the grapes with me as I put them on the plate. Start at 0. 0, 1, 2, 3, 4, 5, 6, 7, 8. 8 grapes."
3. Tell students, "I'm really hungry! Let's add one more piece of fruit!" Put a blueberry on the plate. Say, "I'll touch while you count together: 1, 2, 3, 4, 5, 6, 7, 8, 9."
4. Touch the blueberry and ask, "What is 8 and 1 more?" Help students respond, "9." Tell them, "Let's find out (or check) by counting, 1, 2, 3, 4, 5, 6, 7, 8, 9."
5. Ask, "How many pieces of fruit are there now?" Lead students to use a complete sentence: "There are 9 pieces of fruit."
6. Say, "Yes! So, 8 and 1 more is… (point to the blueberry)?" Pause so students can respond, "9."





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7. Tell students, "Now, I get to eat the fruit, but I'll share!" Pretend to eat one, hide it, and invite 8 more students to do the same. Hold up the empty plate and ask, "How many pieces of fruit are there?"

Part 2: Practice

Materials: (S) Per student: plate, small resealable bag containing 9 pieces of fruit (e.g., 8 grapes and 1 blueberry)

Send partners to prepared tables.

1. Tell students, "Now, you get to make a snack." Have them place each grape on the plate and say, "Count all the grapes." Observe the configuration they use and how they count. Have them touch and count and tell their partner how many they counted (8).
2. Ask them to add another piece of fruit. Have students put the blueberry on the plate and count, "1, 2, 3, 4, 5, 6, 7, 8, 9." Say, "So, there are 8 grapes and 1 blueberry." Tell your partner: "8 and 1 more is…?" MP.6
3. Instruct students to count as they touch each piece of fruit. Lead them to say, "1, 2, 3, 4, 5, 6, 7, 8, 9. 8 and 1 more is 9."
4. Invite students to "eat" the fruit by taking them off the plate and to say how many there are after they are all eaten.

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

While circulating during the practice portion of the lesson, help students who are still struggling with counting a set of objects to analyze their error and determine a way to remedy it; for example, they might organize the fruit to make counting easier.

Student Debrief (3 minutes)

Lesson Objective: Introduce 9, and relate 9 to 8 and *1 more*.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

CENTER CONNECTION:

In the block center, give pairs of students 8 of the same blocks, and have them count. Have them build a tower with their 8 blocks. Give each pair *1 more* block to add to their structures. Have them count the total number of blocks. Invite each pair to make a new structure with their 9 blocks. Discuss why the structures all look different, even though everyone had 9 blocks.

- Close your eyes, and picture the fruit on your plate. Do you remember how many were grapes? How many were blueberries? How many pieces of fruit were there altogether?

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- Tell me at the signal if you can: What is 8 and 1 more without counting? (Give signal.) Let's count to make sure (or find out).
- Let's see which of these answers you know now. (Show 5 fingers.) "What is 5 and 1 more?" (Pause, give time to respond, and then pop up one finger.) Yes! Six. (Continue to show 6 fingers.) "What is 6 and 1 more?" (Continue the pattern to 9.)

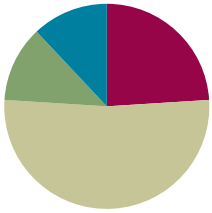
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Lesson 23

Objective: Use linear configurations to count 9 in relation to 5.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Count to 9 **PK.CC.1** (2 minutes)
- The Wind and the Trees! **PK.CC.3.abc** (4 minutes)

Count to 9 (2 minutes)

Note: Skill with rote counting gives students greater freedom to focus on the relationships between the numbers rather than struggling to retrieve the number words. By moving from loud to silent, students may start to realize they can count "inside their brains" without being heard.

T: Count to 9 for me so that I can hear you. (Students do so.)
T: Count to 9 for me so that I almost can't hear you. (Students do so.)
T: Count to 9 so I can't hear you. (Students do so.)
T: Close your eyes, and count to 9 without moving your lips. (There is no way of knowing if students do so. Provide wait time.)
T: When I count in my mind, no one hears me or sees me counting.

The Wind and the Trees! (4 minutes)

Materials: (S) Bag with 9 manipulatives (e.g., blocks or dominoes)

Note: This fluency activity allows students to count 9 "trees" and to revisit zero.

T: Let's pretend that we are gardeners planting trees. There are some trees in our truck. (Show the bag to make it clear they are pretending it is the truck.) How many trees have we planted?
S: Zero! → None. → Not any.
T: Let's take 9 trees out of the truck and lay them flat. (Pause.) Let's plant 9 trees in a short line. (Demonstrate "planting a tree" by standing up the blocks facing each other.)

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T: What is the last number you said?
S: 9.
T: How many trees are planted?
S: 9.
T: A big wind came and knocked one tree down so that it knocked all the others down! (Tap the last tree so that it knocks the other trees down.) How many trees are standing up now?
S: Zero! → None. → Not any.

Application Problem (3 minutes)

Materials: (T) Backpack (S) Per pair: small resealable bag with 9 manipulatives (e.g., square tiles or counters)

Say, "Now, let's pretend we are explorers about to go on a long hike, and these are granola bars we'll need. I will tell you and your partner exactly how many granola bars to put in your bag." Tell each pair of students a different number, preferably 6–8. This is a moment to differentiate by giving struggling students smaller numbers. Circulate and observe students' counting strategies.

After students have counted their given number into their bags, collect and count the bags while putting them into the lead explorer's backpack.

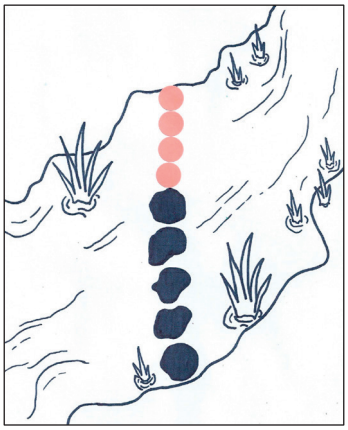
Note: Children need many opportunities to count larger groups of objects (6–9) within engaging contexts. Remember, there is at least 1 extra manipulative here. The purpose of this is to create a little complexity. Watch how students take the extra manipulative(s) into consideration (or not) when making their bags.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Creek mat (Lesson 2 Template), 4 small round stickers, explorer figurine (optional)

Gather children in a circle around the creek mat.



1. Say, "A different explorer has reached the same creek that his friend has already crossed." Point out the line of rocks. Ask a volunteer to move the explorer across each rock while the class counts, "1, 2, 3, 4, 5."
2. Hold up a sticker and say, "Pretend this is a rock. Do you think the explorer could reach the other side if there was 1 more rock?" Add 1 sticker to the line.
3. Ask, "How many rocks are there now?" Have another volunteer move the explorer across each rock while the class recounts 5 with 1 more: "1, 2, 3, 4, 5, 6. There are 6 rocks."
4. Say, "We had 5 rocks and we added…?" Students respond, "1 more!" Say, "Now, we have 6."

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5. Ask, “Is he there yet?” (No.) “Let’s add another rock.” (Repeat Steps 2–4 to count 7, then 8, and then 9 rocks.)
6. Ask, “How many black rocks were there?” Challenge students to ask a *how many* question about the new rocks.
7. Ask, “How many rocks did the explorer walk on to cross the creek?” Students recount to 9.

Part 2: Practice

Materials: (S) Creek mat (Lesson 2 Template), 9 small counters or stickers

Send children to prepared tables.

1. Tell students, “It’s your turn to help the explorer cross the creek.”
2. Say, “First, take out your counters, and cover the rocks in the creek.” Tell your partner how many rocks are in the line.
3. Say, “Now, put 1 more rock in the line.”
4. Guide students to count the black rocks, count the new rocks, and then count ALL the rocks each time they put 1 more in the line. Instruct them to ask and answer *how many* questions.
5. Repeat Steps 3 and 4 so that there are 7, then 8, and then 9 rocks. Celebrate the explorer’s crossing.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

While circulating during the practice portion of the lesson, highlight student success with counting, especially for students who previously had difficulty counting a set of objects .

Student Debrief (3 minutes)

Lesson Objective: Use linear configurations to count 9 in relation to 5.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child’s progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- How many rocks were in the creek at first? What did you need to do to help the explorer cross the creek?
- Count the black rocks. (Pause as students count.) Count the new rocks. (Pause.) Count ALL the rocks. (Pause.) How many did you count altogether?
- (If students are ready, consider asking the following question and demonstrating with linking cubes in a line.) Listen to my pattern: 5 and 1 more is 6. 6 and 1 more is 7. 7 and 1 more is 8. 8 and 1 more is…?

CENTER CONNECTION:

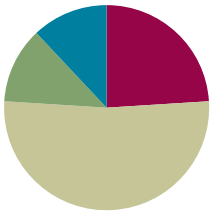
If space permits, have students pretend to be explorers who need to travel across a creek (a pre-determined area in the classroom). Carpet squares can be used as the rocks needed to cross the creek.

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Lesson 24

Objective: Count from 0 to 9 from left to right with fingers.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Change of Pace Counting from 0 to 9 **PK.CC.1** (2 minutes)
- Use "1 More" to Make a Tower of 9 **PK.CC.3c** (4 minutes)

Change of Pace Counting from 0 to 9 (2 minutes)

Materials: (T) 9 small paper plates

Note: By using a change of pace, students start to retain the number words for longer periods of time, helping them to remember what is 1 more, which lays the foundation for *counting on* in Grade 1. If paper plates are unavailable, linking cubes are a good substitution and can be reused in the next fluency activity.

T: Let's set the table for 9 people today. (Perhaps place 2 rows of 4 plates with the last plate at the "head" of the table.) Only say the number when the plate touches the carpet. (Hover the first plate over the "table.") How many plates are on the table now?

S: Zero.

T: (Place the first plate.) Now?

S: 1.

T: (Place the second and third plates quickly.)

S: 2, 3.

T: (Pause significantly before placing the fourth and fifth quickly. Again, there should be laughter and false starts.)

Continue changing the pace up to 9 plates.

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Use "1 More" to Make a Tower of 9 (4 minutes)

Materials: (S) 9 loose cubes with 5 of one color and 4 of another color

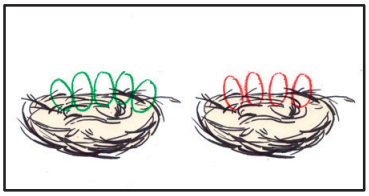
Note: Moving forward from Lesson 23, this fluency activity focuses on *1 more*, again observing more than directing. For example, the directions do not indicate to separate the colors. Rather, observe what students do.

T: Open your bags, and take out 0 cubes to start your tower.
T: Take out 1 cube. Use 1 cube to start your tower.
T: Take out 1 more cube. Add 1 more cube to your tower. How many cubes does your tower have now?

Continue the process until the tower reaches a height of 9 cubes. Have students compare their towers and notice the possible differences in their appearances.

Application Problem (3 minutes)

Materials: (S) Problem Set, 1 green and 1 red crayon



Give each student a Problem Set with two nests drawn on it. Say, "5 eggs are in a nest. Use your green crayon to draw a line of 5 eggs in one nest." (Pause.) "There are 4 more eggs in another nest. Use your red crayon to draw the 4 eggs in the other nest." (Pause.) "Count how many eggs are in the two nests."

Note: This is a repetition of almost the same context from Lesson 14 in Topic C. This repetition allows students to focus more on the number relationships. The crayon colors are changed from Lesson 14 so that students do not overly relate 5 with the color blue and the "extras" with the color orange.

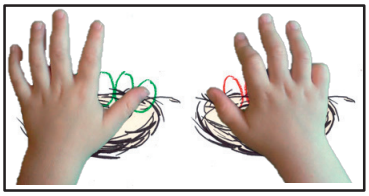
Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (S) Problem Set from Application Problem

Note: Remember to demonstrate with the right hand first if standing or sitting in front of the children.

1. Say, "It's almost spring, and all the baby chicks (wiggle fingers) are warm inside their eggs inside their nests (make 2 fists on a surface)."
2. Say, "When spring comes, the chicks in the green eggs hatch first and stand up. This one hatched first (raise left pinky)." Demonstrate the first 5 hatching and standing up, starting with the pinky (left to right starting from the pinky and moving to the thumb of the left hand). Have the children count the chicks as they emerge, "1, 2, 3, 4, 5."



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3. Say, "There are more chicks hatching in the nest with the red eggs! (Shake the right fist.) Four of them hatch and stand, starting with the shortest one!" Have 4 more chicks come out by showing the thumb, index finger, middle finger, and ring finger of the right hand.
4. Say, "Let's count how many chicks have hatched." To support a precise count, the teacher lifts fingers off the surface and drops them as students count, "1, 2, 3, 4, 5, 6, 7, 8, 9."
5. Have the children show their nests and eggs. Have them pretend all the chicks are in the eggs in the nests again (2 fists), and then count 9 chicks hatching again, starting with the pinky.
6. Ask them how many eggs are still in their nests.

Part 2: Practice

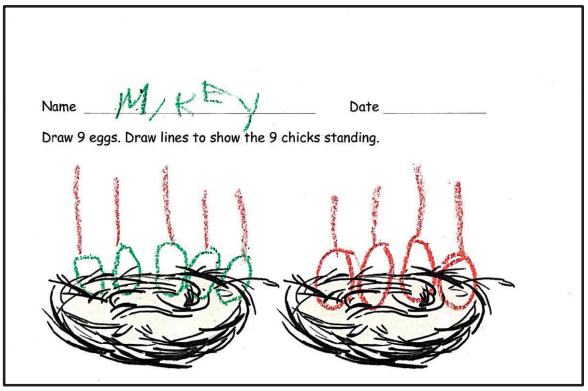
Materials: (S) Problem Set, crayon

Send students to prepared tables.

1. Have students make their fists on top of the nests of the Problem Set. Tell them, "Nine chicks (fingers) hatch and stand, one at a time. Let's count them as they hatch!" Have them count from left to right as they show each finger.
2. Have students draw to show each chick that hatches. (Demonstrate one possible way of showing this by drawing a line from each egg.)
3. Ask questions while circulating, such as, "How many chicks hatched?" "How many are still in eggs?" "How many chicks hatched in this nest? This one?" "Which was the first chick to come out? Which was the last?" MP.6
4. Ask the children to show their partner two ways to count the chicks who hatched: by touching and counting using their picture and by counting on their fingers.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Differentiate questioning by asking more challenging questions for students who are ready. For example, some students may be ready to answer the following questions: "If one more chick hatched, how many chicks would be in the nests?" "If five chicks hatch in this nest and three hatch in this nest, how many eggs are in the nests?"



Student Debrief (3 minutes)

Lesson Objective: Count from 0 to 9 from left to right with fingers.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

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Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Show me your two nests. (Students show 2 fists.) Show me all the chicks. (Students show all their fingers.) On your fingers, show me the chicks that hatched today.
- (Display a completed Problem Set while children continue to show 9 fingers.) How is your picture of the chicks that hatched like the 9 fingers you are showing?
- Let's count to 8 using our fingers. Now, let's count to 9. What is different about counting to 8 and counting to 9?

CENTER CONNECTION:

In the sensory center, provide opportunities for students to practice moving 9 fingers through a variety of materials (e.g., sand, oatmeal, shaving cream, finger paint). Use the nest context as a starting point, but invite children to make up other stories about their 9 fingers and the 9 paths that they create (e.g., 9 bicycles riding in mud or 9 bugs in the earth).

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Name _____ Date _____

Draw 9 eggs. Draw lines to show the 9 chicks standing.



Name _____ Date _____

Draw 9 eggs. Draw lines to show the 9 chicks standing.

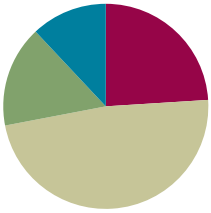


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Lesson 25

Objective: Count 9 objects in array configurations.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(4 minutes)
Concept Development	(12 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Change of Pace Counting from 0 to 9 **PK.CC.1** (2 minutes)
- Compose a Tower of 9 **PK.CC.3c** (4 minutes)

Change of Pace Counting from 0 to 9 (2 minutes)

Materials: (T) 9 small paper plates, 9 forks

Note: By using a change of pace, students also learn to pay attention to the precision of the "touch" and the "count."

T: (Place the plates in an array of 2 fours and an extra at the "head" as if at a rectangular table.) Who remembers how many plates we set yesterday?

S: Not me! → 9.

T: Let's count a fork for each plate so the guests can eat birthday cake! Start with 0.

S: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

As in Lesson 24, use a change of pace, starting with zero, while counting out the forks for each plate. Do not let students count ahead of the placement of each fork. Keep it playful and fun.

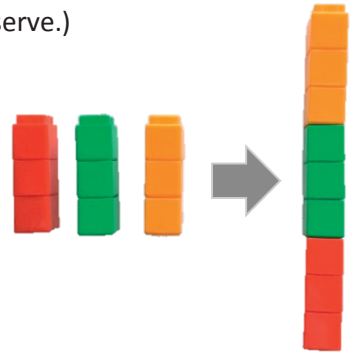
Compose a Tower of 9 (4 minutes)

Materials: (S) 9 loose cubes (3 in one color, 3 in another, and 3 in another)

Note: Moving forward from Lesson 15, this fluency activity sets the stage for the Concept Development's array configuration. Observe the choices students make when asked to make 3 towers that are the same. (Do they make towers that are simply the same size? Or, are they also the same color? Or, are they the same color pattern?) Assure students that there are many correct ways to make the towers.

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T: Use all your blocks to make 3 towers that are the same. (Pause and observe.)
T: Put your 3 small towers together to make 1 tall tower. (Pause and observe.)
T: Break your tower again into 3 towers that are the same. How many cubes are in 1 small tower? (Pause and observe counting strategies.)
T: Put your tower together again. Touch and count to find how many cubes there are in all. (Pause and observe counting strategies.)



Application Problem (4 minutes)

Materials: (T) 3 cans of tennis balls (each with 3 balls), or tennis ball images (Template 1)

T: One morning, Bailey and Maya wanted to play tennis. Bailey found a can of tennis balls. (Invite Bailey to place the can of tennis balls on her desk, or attach the image to the board.)
T: How many tennis balls are there? I'll touch while you count!
S: 1, 2, 3.
T: When they were playing, Victoria brought another can of tennis balls! (Invite Victoria to place another can of tennis balls next to the first on the desk.)
T: How many tennis balls are there now? I'll touch while you count!
S: 1, 2, 3, 4, 5, 6.
T: Spencer came to play and brought another can. (Invite Spencer to place another can of tennis balls next to the first on the desk.)
T: How many tennis balls are there now? I'll touch while you count!
S: 1, 2, 3, 4, 5, 6, 7, 8, 9.
T: How many cans of balls are there?
S: 3.
T: How many tennis balls are there? (Some students may need to recount while others remember.)

Note: This problem is designed for students to count 9 in an array configuration while also seeing 9 composed of 3 groups within the story context.

Concept Development (12 minutes)

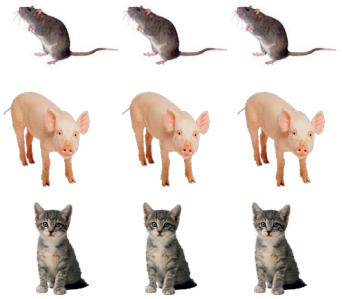
Part 1: Concept Introduction

Materials: (T) 9 student actors, nursery rhymes (Template 2)

Note: The stories and songs provide a playful context for students to count an array of 9 objects. Limit the details so that counting remains the primary objective. Also, if preferred, change the words of "Three Blind Mice" from *…They all ran after the farmer's wife, who cut off their tails with a carving knife…* to *…who chased them away with a fork and a knife.* If using students as the animals in the story distracts from the counting, consider using toy animals (3 mice, 3 pigs, and 3 cats).

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1. Tell students, "I had the funniest dream last night! The animals from different storybooks and songs came to visit me! First it was the mice from 'Three Blind Mice.' They were trying to get away from the farmer's wife." The teacher lines up 3 students to act as mice as he or she sings the song. Ask students, "How many mice are there? I'll touch while you count." "1, 2, 3."
2. Say, "Next, the three little pigs showed up! They were trying to get away from the big bad wolf who wanted to huff and puff and blow their houses down!"
3. Line up 3 students to act as pigs, and ask students to count all the animals as the teacher first touches each pig on the shoulder, moving from left to right, and then touches each mouse on the shoulder, again moving from left to right. "1, 2, 3, 4, 5, 6."
4. Say, "Then, the three little kittens came. They needed help finding their mittens." Line up 3 students to act as kittens, and sing the song. Ask students, "How many animals are there now?" "1, 2, 3, 4, 5, 6, 7, 8, 9."
5. Ask, "How many *different kinds* of animals are there?" Point to each row, and guide them to say, "3."
6. Ask, "How many animals are there? Let's count together." Touch each actor on the shoulder as students count, "1, 2, 3, 4, 5, 6, 7, 8, 9."



Part 2: Practice

Materials: (T) 9 small counters (each set of 3 a different color), animal array (Template 3) (S) Per student: 9 small counters (each set of 3 a different color), animal array (Template 3)

Gather students in a circle before sending them to the prepared tables.

1. Show students the template and the counters. Tell them, "Let's pretend the counters are the mice, pigs, and kittens. Now, the animals want to visit you!"
2. Show students how to line up the counters, moving from left to right and top to bottom. Have them count aloud as they place each counter.
3. Instruct students to ask and answer *how many* questions about the animals as they place and count the counters.
4. Circulate as students work, guiding them to place the counters from left to right and top to bottom, counting as they go.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Provide opportunities throughout the day for students to form 3 by 3 arrays to support comprehension. Some possible opportunities include: sitting on the rug for a story in 3 by 3 arrays, lining up in 3 by 3 arrays, and so on. Make adjustments as necessary for the number of students in the class.

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Student Debrief (3 minutes)

Lesson Objective: Count 9 objects in array configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

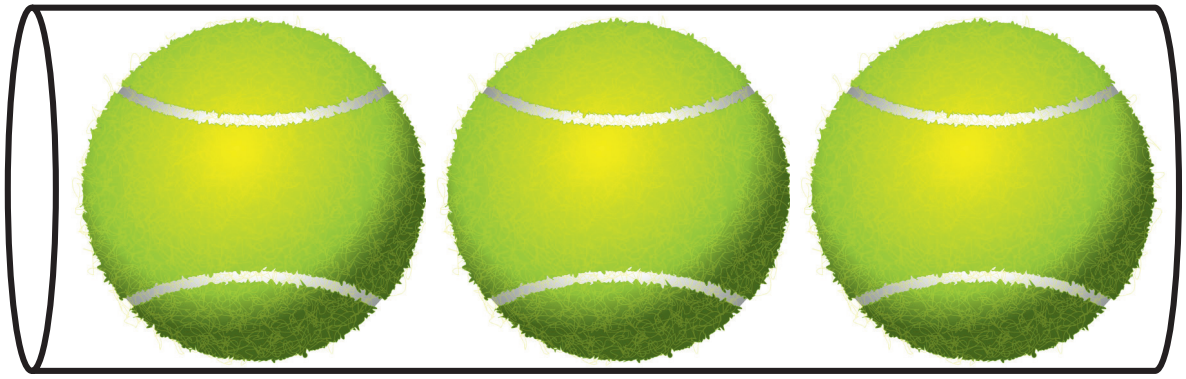
Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

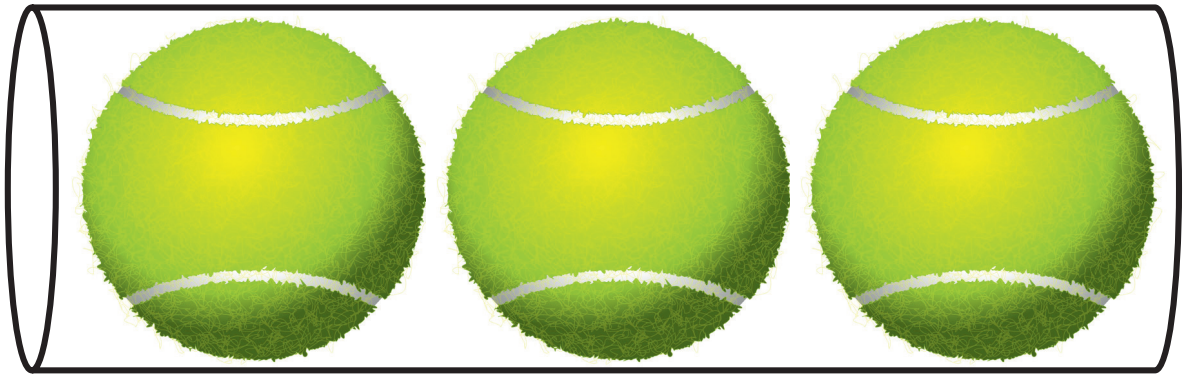
- (Using the Animal Array Template, count in a disorganized manner to 9.) Is this the best way to count these animals? What should I do differently?
- (Show a completed Animal Array Template with 1 pig counter missing.) How many pigs are missing? How do you know? How many animals need to be in each row?
- (Show images of 8 and 9 dots in array configurations.) Which set of dots shows how many animals we counted today?

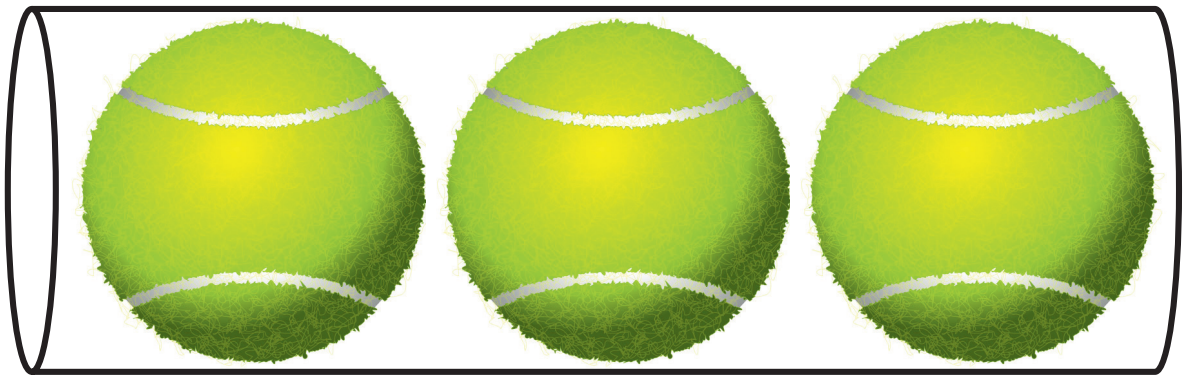
CENTER CONNECTION:

Use the dramatic play or library center as a place for children to work with 3 mice, 3 pigs, and 3 kittens on the felt board. First, have children line them up in an array and count all the animals. Then, invite children to retell the stories of each threesome, or make up a new story including all of the characters.

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tennis ball images

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Three Blind Mice

Three blind mice. Three blind mice.

See how they run. See how they run.

They all ran after the farmer's wife, who chased them away with a fork and a knife.

Did you ever see such a sight in your life,

As three blind mice?

Three Little Kittens

Three little kittens they lost their mittens,

And they began to cry,

Oh, mother dear, we sadly fear

Our mittens we have lost.

What! Lost your mittens, you naughty kittens!

Then you shall have no pie.

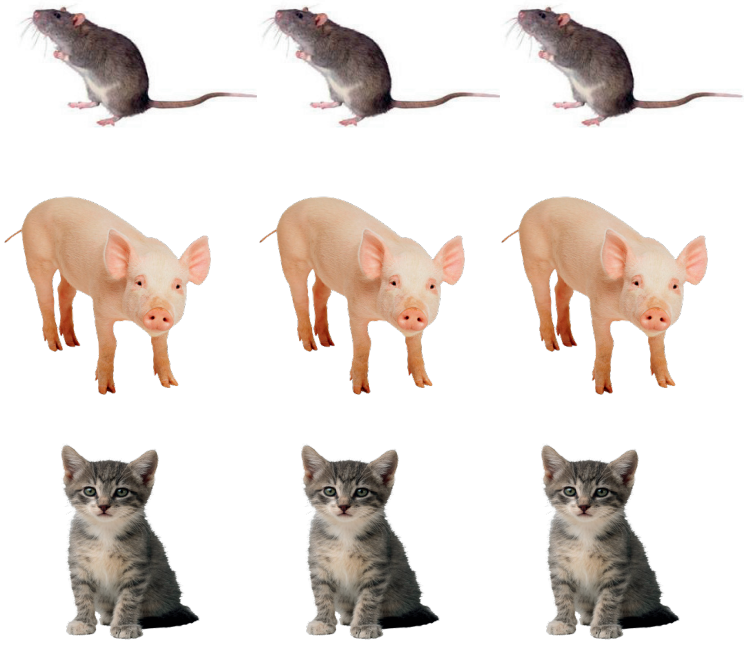
Mee-ow, mee-ow, mee-ow.

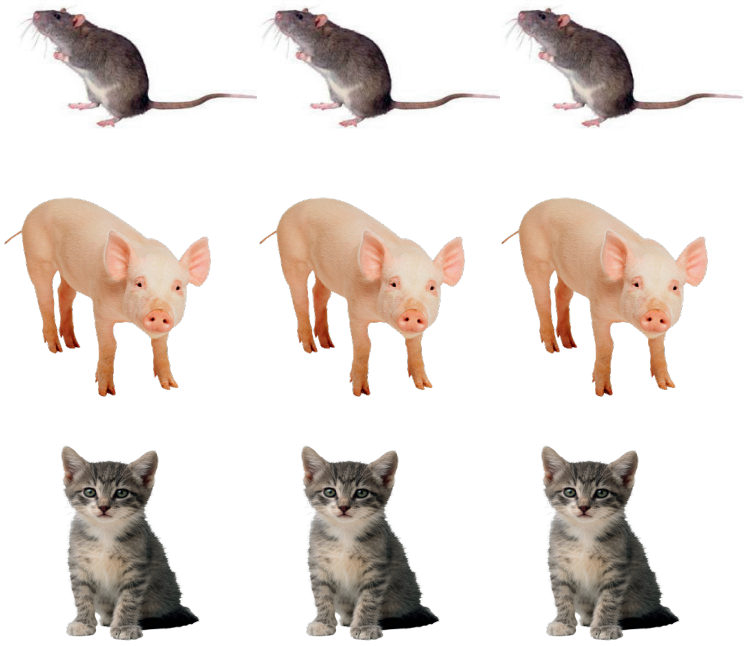
No, you shall have no pie.

---

nursery rhymes

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animal array

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Topic F

Matching One Numeral with 0 up to 9 Objects

PK.CC.3ab, PK.CC.4

Focus Standards:	PK.CC.3.ab	Understand the relationship between numbers and quantities to 10; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
	PK.CC.4	Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1-10, count out that many objects.
Instructional Days:	5	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

Topic F follows the instructional path laid out in Topics B and D, with children matching groups of 0 and 9 objects to the numeral that tells *how many* (**PK.CC.4**). As in previous topics, the numerals are prewritten.

Lesson 26 introduces the numerals 0 and 9 as children practice decomposing and composing 9. First, they compose a tall tower by putting together 4- and 5-stick towers. Next, they count and see their new tall tower has 9 cubes. Then, they decompose their tower; for example, "I broke my 9-tower into two parts. When I put them back together, I have 9 again!" The emphasis is not that 5 and 4 make 9 or that 9 can be decomposed into 6 and 3; rather, it is that 9 can be made by putting smaller parts together. Likewise, once composed, 9 can be broken down into smaller parts that, when reassembled, make 9 again.

In Lesson 27, children count up to 9 objects arranged in a circular configuration, carefully marking the start of their count, and choose the numeral that tells *how many*. Lesson 28 returns to the seeds context from Topic D and asks students to arrange up to 9 seeds in varied configurations and to find the matching numeral (**PK.CC.3.b**). Students practice matching different configurations of 7, 8, and 9 to the corresponding numerals.

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In Lesson 29, children again pretend they are waiters who use tallies to record how many flowers are being ordered at the Pollen Café (up to 9). Lesson 30 asks children to become chefs at the Pollen Café. This time, the chef sees the numeral and makes a batch of flowers to match the waiter's request.

During Fluency Practice in Topic F, students practice rote counting through 10 and "touching and counting" up to 10 objects in varied configurations through engaging contexts. They continue their work with composing and decomposing and match numerals 0–9 to varied counts.

A Teaching Sequence Toward Mastery of Matching One Numeral with 0 up to 9 Objects	
Objective 1:	**Compose 9, and decompose into two parts. Match numerals 0 and 9 to no objects and 9 objects. (Lesson 26)**
Objective 2:	**Count 9 objects in circular configurations. (Lesson 27)**
Objective 3:	**Arrange and count 9 objects in varied configurations. (Lesson 28)**
Objective 4:	**Tally 9 objects. (Lesson 29)**
Objective 5:	**Look at a numeral and count out a group of up to 9 objects. (Lesson 30)**

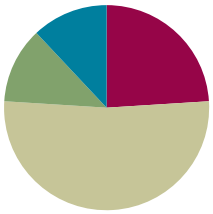
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Lesson 26

Objective: Compose 9, and decompose into two parts. Match numerals 0 and 9 to no objects and 9 objects.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Count Flaps to 10 **PK.CC.1** (2 minutes)
- Count Tennis Balls **PK.CC.4** (4 minutes)

Count Flaps to 10 (2 minutes)

Note: This fluency activity addresses rote counting to 10 in preparation for Topic G.

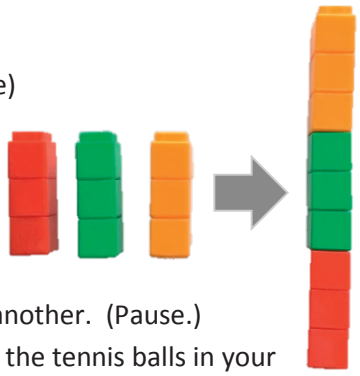
T: Let's pretend we are baby birds again and proudly count our new skill of flapping our wings 10 times. Join in when you are ready! (Repeat until all are participating. Silence your voice for at least one entire count to ten.) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

While keeping it playful, do not let the students count ahead of each flap.

Count Tennis Balls (4 minutes)

Materials: (S) 9 loose cubes, 3 each of 3 different colors (red, green, and orange)

Note: In this fluency activity, students are given the opportunity to practice counting 9 objects in an array configuration.



T: Pretend your cubes are tennis balls. Put together a can of tennis balls that are the same color. (Pause as students do so.)

T: Put together a different can of tennis balls. (Pause and observe.) And another. (Pause.)

T: Stack your cans like this. (Demonstrate as pictured to the right.) Count the tennis balls in your stack. (Observe their counting strategies.) How many did you count?

S: 8. → 9. → 10.

T: Hmmm. There should be exactly 9. Try again, and be sure to touch and count carefully. (Watch carefully to see who is able to count to 9 correctly.)

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Application Problem (3 minutes)

Materials: (T) 9 student actors (S) 9 loose cubes, 3 each of 3 different colors (same as fluency activity)

Invite 9 students to the front, and quietly ask them to form pairs (define the term pair as needed.) Have the rest of the class represent the student actors with the cubes used in the fluency activity. Ask, "What happens when you put your friends in pairs? What does it look like?"

Next, have the 9 students pretend they are sitting together on a bus, where 3 children can sit in each row. Have the rest of the students represent the student actors with their cubes. What happens when you put 3 friends in a row? What does it look like?

Note: Changing between partners of 2 and groups of 3 allows students to make some important informal observations about the number 9.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

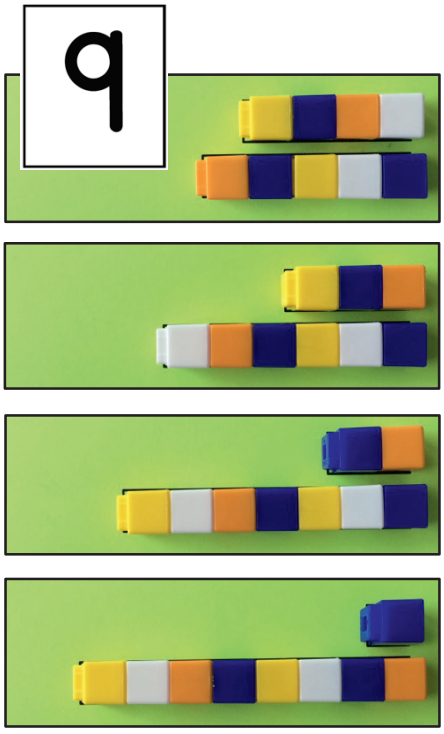
If students are unable to count 9 objects in an array correctly, find time to briefly sit with them alone and observe precisely where the one-to-one correspondence is getting lost. Guide their hand gently through the number of cubes 1 or 2 less than the confusion point so that they see what they did correctly. It may be that their rote counting needs work or that the clarity between two distinct number words has not yet emerged.

Concept Development (13 minutes)

Part 1: Concept Introduction

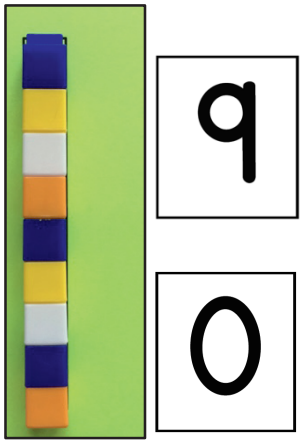
Materials: (T) 9 loose cubes (mixed colors with 0 red cubes), Partners of 9 Puzzles (start with 5- and 4-stick, Template), numeral cards 9 and 0 (Lesson 6 Template 2)

1. Place the 9 loose cubes on the floor. Invite two students forward. Tell one student to make a stick of 5 cubes and the other to make a stick of 4 cubes.
2. Display the 5- and 4-stick puzzle. Invite the students to place their sticks on the matching puzzle places.
3. Use self-talk while joining the two sticks: "These are such familiar numbers! Five and 4 are our good friends! I wonder what would happen if I put these two sticks together." Join the sticks, and guide children to see that there is now one longer stick. Count the 9 cubes as a class.
4. Introduce the numeral 9. "This is how we show the number 9. Everyone trace it with your finger in the air." Invite students to share about its shape and what it reminds them of.



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5. Ask, "Can I break this 9-stick so that I have the same two small sticks again?" Invite a student to demonstrate and prove that they are the same by placing sticks on the puzzle.
6. Have students make one long stick of 9 again. Ask, "How many cubes are there in your stick?" (Pause.) "How many cubes are red?" Use parallel talk to say, "Hmmm. I have 9 cubes of many colors and 0 red cubes! It's a puzzle with 9 and 0." Display all the Partners of 9 Puzzles. Ask, "Can you help me find the puzzle that shows 9 and 0 as partners? It should match our 9-stick and our 0-stick." Guide children to find the matching puzzle using trial and error.
7. Introduce the numeral 0. "This is how we show the number 0. Everyone trace it with your finger in the air." Invite students to share about its shape and what it reminds them of.



Part 2: Practice

Materials: (S) 9-stick, Partners of 9 Puzzles (Template), numeral card 9 (Lesson 6 Template 2)

Continue to work in the circle so children can easily pass the puzzles.

1. Distribute a Partners of 9 Puzzle to each child.
2. Give students a chance to break their stick and place it on a puzzle. Guide them to describe their work as they are able. For example, students may say: "I made smaller sticks." "I broke my 9-stick into two parts." "I have some cubes here and some cubes here." "I have 3 cubes here and 6 cubes here." MP.2
3. Have children put the parts together again. Guide them to count and tell how many are in their 9-stick. Each time they make 9 again, have them trace the numeral and say, "nine."
4. Have children pass the puzzle to the right and repeat Steps 2 and 3.

Student Debrief (3 minutes)

Lesson Objective: Compose 9, and decompose into 2 parts. Match numerals 0 and 9 to no objects and 9 objects.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

CENTER CONNECTION:

Add the Partners of 9 Puzzles to the block or puzzle center. Use a coding system so children are able to find the puzzles that go with each number (e.g., all Partners of 9 Puzzles on green paper).

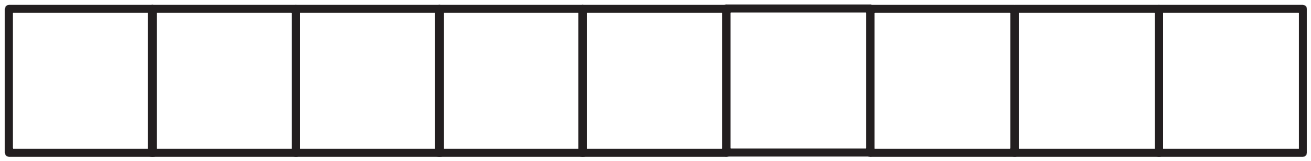
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Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

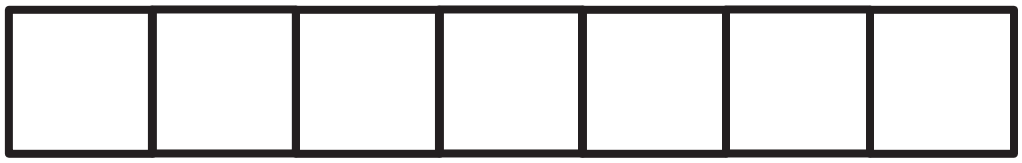
- (Show Partners of 9 Puzzles.) What was the same about all of your puzzles today?
- (Show a stick of 9.) How many are in this stick? (Break the 9-stick into two smaller sticks. Then, put it back together.) How many are in this one stick? Do we have to count?
- Show me 9 fingers. Wiggle 4 fingers. (Repeat, wiggling different numbers of fingers. Let them use their fingers in any way they wish.)
- (Show numeral cards 9 and 0.) Let's compare the number 9 with the number 0. How do they look different? (Repeat with 2, 3, etc.)

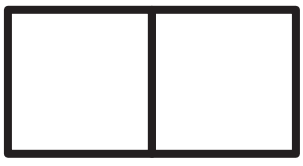
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Cut along dashed lines to prepare Partners of 9 Puzzles.





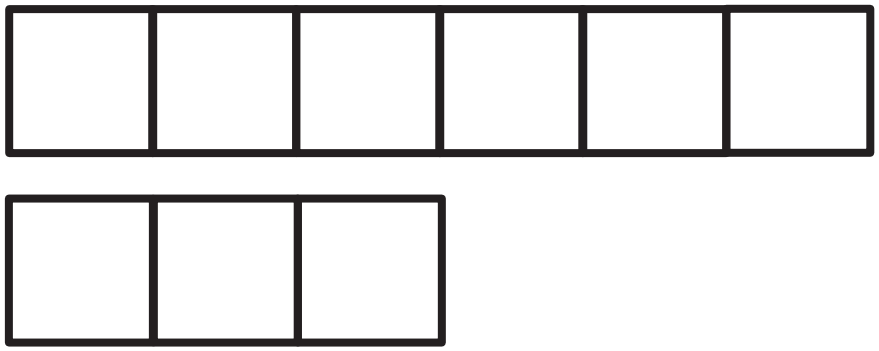


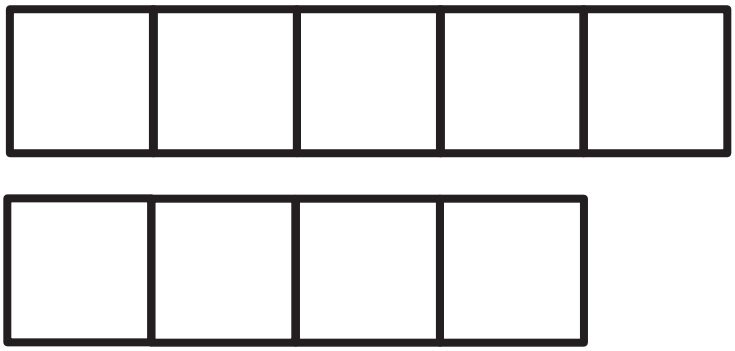


partners of 9 puzzles

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Cut along dashed lines to prepare Partners of 9 Puzzles.





partners of 9 puzzles

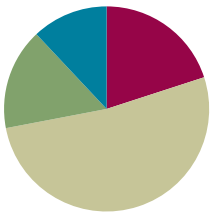
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Lesson 27

Objective: Count 9 objects in circular configurations.

Suggested Lesson Structure

Fluency Practice	(5 minutes)
Application Problem	(4 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (5 minutes)

- Clap and Count from 0 to 10 **PK.CC.3.a** (1 minutes)
- Make a Line of 9 Beans **PK.CC.3.a** (4 minutes)

Clap and Count from 0 to 10 (1 minute)

Note: Students count from 0 to 10 while making one clap for one counting word, a bridge between rote counting and one touch for one count. By drawing out the "fiiiive," the students have a chance to see the relationship of 9 and 10 to 5.

T: Let's clap and count to 10. Join in when you are ready. 0, 1, 2, 3, 4, fiiiive, 6, 7, 8, 9, 10. (Repeat the count until all are participating.)

NOTES ON MULTIPLE MEANS OF EXPRESSION:

Consider making a musical counting band of percussion instruments with different students using cow bells, shakers, drums of various kinds, tambourines, etc. If students excel, let it be a marching band!

Make a Line of 9 Beans (4 minutes)

Materials: (S) 5 red beans, 4 white beans

Note: During this fluency activity, circulate and watch students' counting strategies.

T: Put your red beans in a line. (Pause.) Count them. Let me hear you counting!
S: 1, 2, 3, 4, 5.
T: Put your white beans in a different line. (Pause.) Count them! Let me hear you counting!
S: 1, 2, 3, 4.
T: Move your line of white beans to the end of your line of red beans to make one long line of beans.
T: Touch and count to find out how many beans are in your line now.
S: 1, 2, 3, 4, 5, 6, 7, 8, 9.

Show students the numerals from 1 to 9. Ask them which one shows the number 9.

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Application Problem (4 minutes)

Materials: (T) 1–5 white board or poster from Module 1 Lesson 22, 6–8 white board or poster from Lesson 17, 9 snails (Template 1), magnetic numerals 1–9.

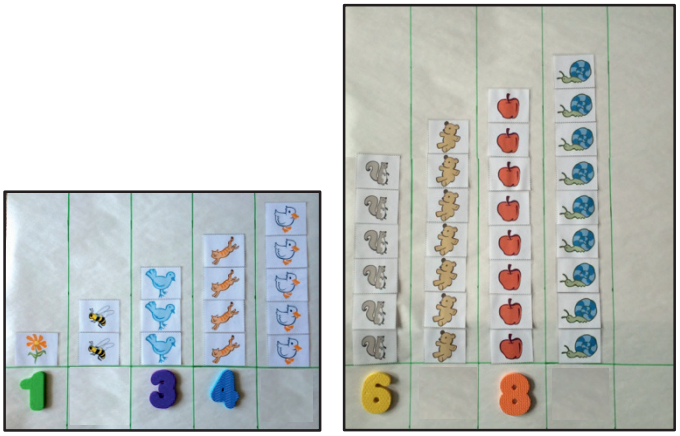
Gather children in a circle. Say the following rhyme while gesturing to each object on the chart:

One little flower, 2 little bees,
3 little birds in a tree.
Nice warm sun shines down on me.
I can count! 1, 2, 3.

4 little kittens come out to play,
On this warm and sunny day.
Five little ducks take a dive.
Count them: 1, 2, 3, 4, 5.

6 little squirrels, quick as can be,
Climbing up the old oak tree.
In its shade sit 7 chairs,
1, 2, 3, 4, 5, 6, 7 bears.

8 little apples up in the tree,
Some for you and some for me.
9 little snails in a line,
1, 2, 3, 4, 5, 6, 7, 8, 9.



Pass out the magnetic numerals 2, 5, 7, and 9. Ask, "Who has the number to show how many bees, (chicks, bears, and snails) there are?" Have students put the magnetic numerals on the chart to match. Say, "Clap when I touch the number 9." Point to each number in order from 1. The students should be silent to encourage *internal* counting, clapping only once when the number 9 is touched.

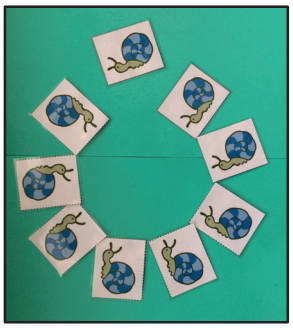
Note: In Topic G, 10 is added to this chart. Select a white board that can be used for this purpose for several days, and leave space on the right side for the addition. Alternatively, use chart paper and objects or numerals with tape on the back.

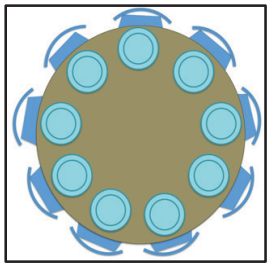
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Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Magnetic numerals 0 and 6–9, 9 snails (Template 1), table template (Template 2)





1. Take the snails off the board, and put them in a circle. Say, "These snails are in a circle to play Duck, Duck, Goose. Let's count how many snails are in the circle." Touch and count each snail. Instead of stopping at 9, continue around the circle until students notice a problem.
2. Ask students for ideas about how to count things in a circle. Support them as they remember how to mark the start. Repeat the count, perhaps moving one snail out of the circle to mark the start of the count.
3. Ask children, "Point to the number that shows how many snails are playing Duck, Duck, Goose." Ask them, "This number? This number?" etc.
4. Display the table template. Say, "After playing the game, the snails are hungry for snack and want to sit at a table with chairs (gesture to be sure the template is understood). Are there 9 plates at the table?" Call a student forward to touch and count each plate. Suggest making a dot on the first plate with a crayon to mark the start of the count if the students do not offer a strategy. Repeat with the chairs if needed.
5. Ask, "How many snails are at the table right now?" Guide children to see that there are 0 snails at the table, and ask them to find the matching numeral.

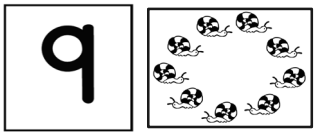
Part 2: Practice

Materials: (S) Per pair: numeral cards 5–9 (cut apart, Lesson 6 Template 2), small resealable bag containing circular configuration cards (cut apart, Template 3), sticker or bean (to mark start)

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Providing all partners with beans or cubes to help mark the start of the count or to place on each object assists in counting circular configurations, and it respectfully and privately allows partners to self-monitor and use cubes if needed.

1. Match students with a partner, and tell them, "Let's play school! One of you will be the teacher, and one of you will be the student."
2. Say, "Teachers, pick a bag and choose a card. Ask your student how many things are in the circle."
3. After students have done so, say, "Teachers, find the number that matches."
4. Students switch roles, repeating Steps 2 and 3.
5. Circulate among groups, and support as necessary. In particular, watch to see whether students are marking a starting point for the count and whether they realize the marked object is the first one counted and does not get recounted at the end of the count.



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Student Debrief (3 minutes)

Lesson Objective: Count 9 objects in circular configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

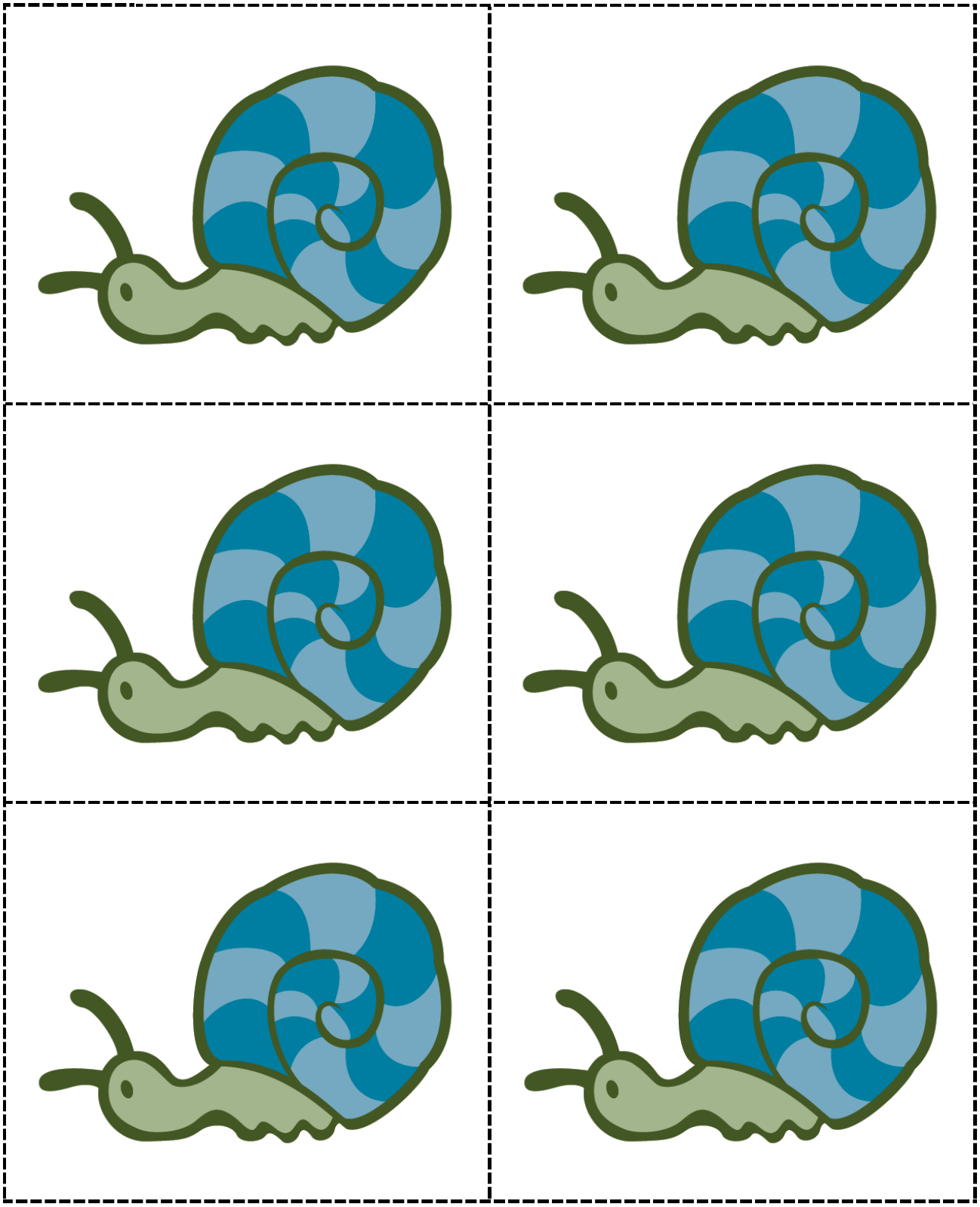
Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- When counting the snails, what did you do to know where to stop counting? How did that help you know where to stop counting?
- (Draw or display 5 objects in a circle. Display numerals 1–9 on the carpet.) Which number tells how many objects I have? (Pause as students need time to count.) What if I put 1 more in the circle? (Continue adding 1 more until there are 9 objects.)
- Tell your partner if you like counting things better in a circle or a line. Why?

CENTER CONNECTION:

Invite children to help set up a circular snack table for the snails in the dramatic play center. Provide cups, plates, and napkins. Have children count the animals, cups, etc. as they are laid out in the circle. Assist them in marking the starting point of their count if needed.

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9 snails

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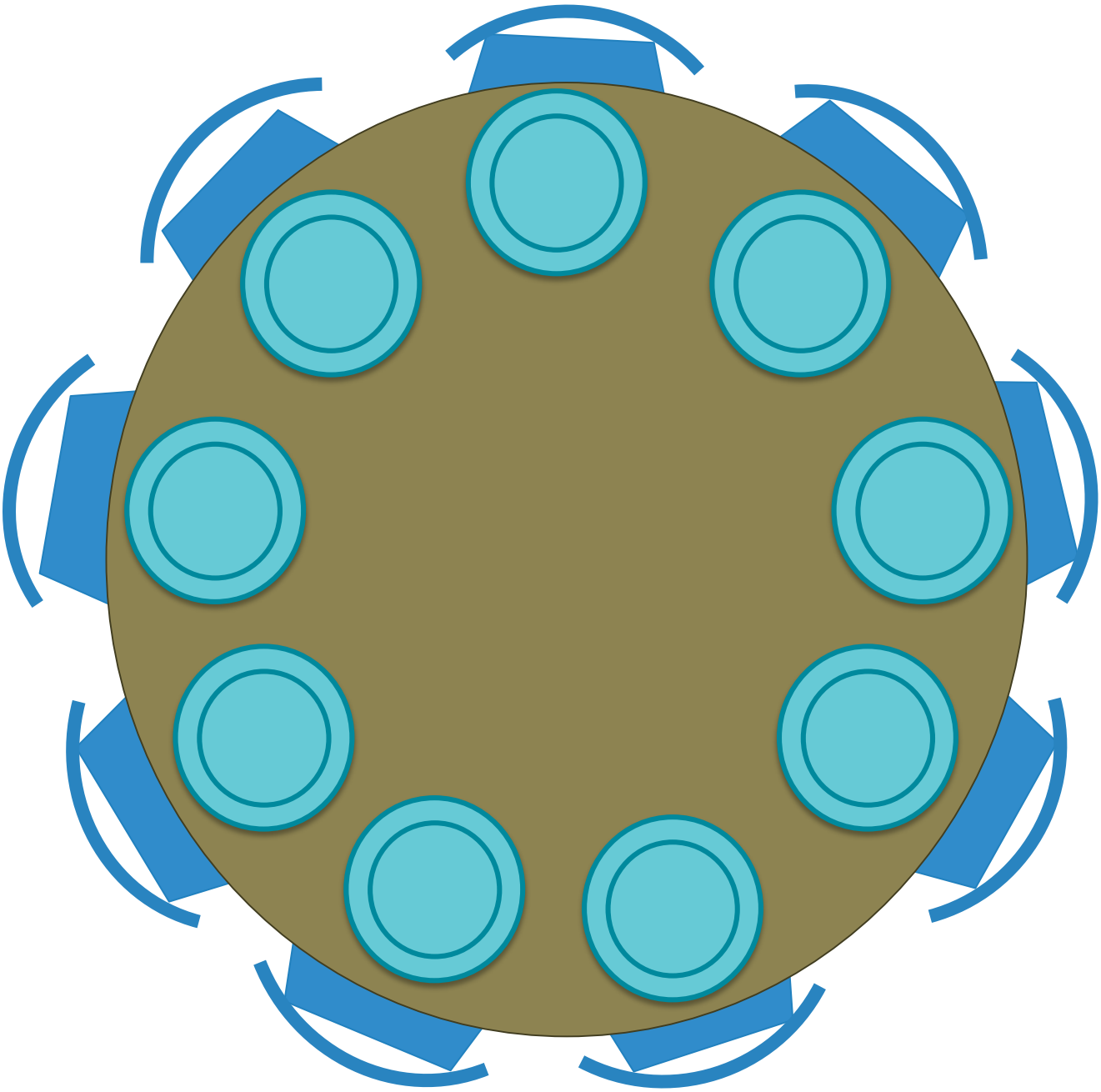
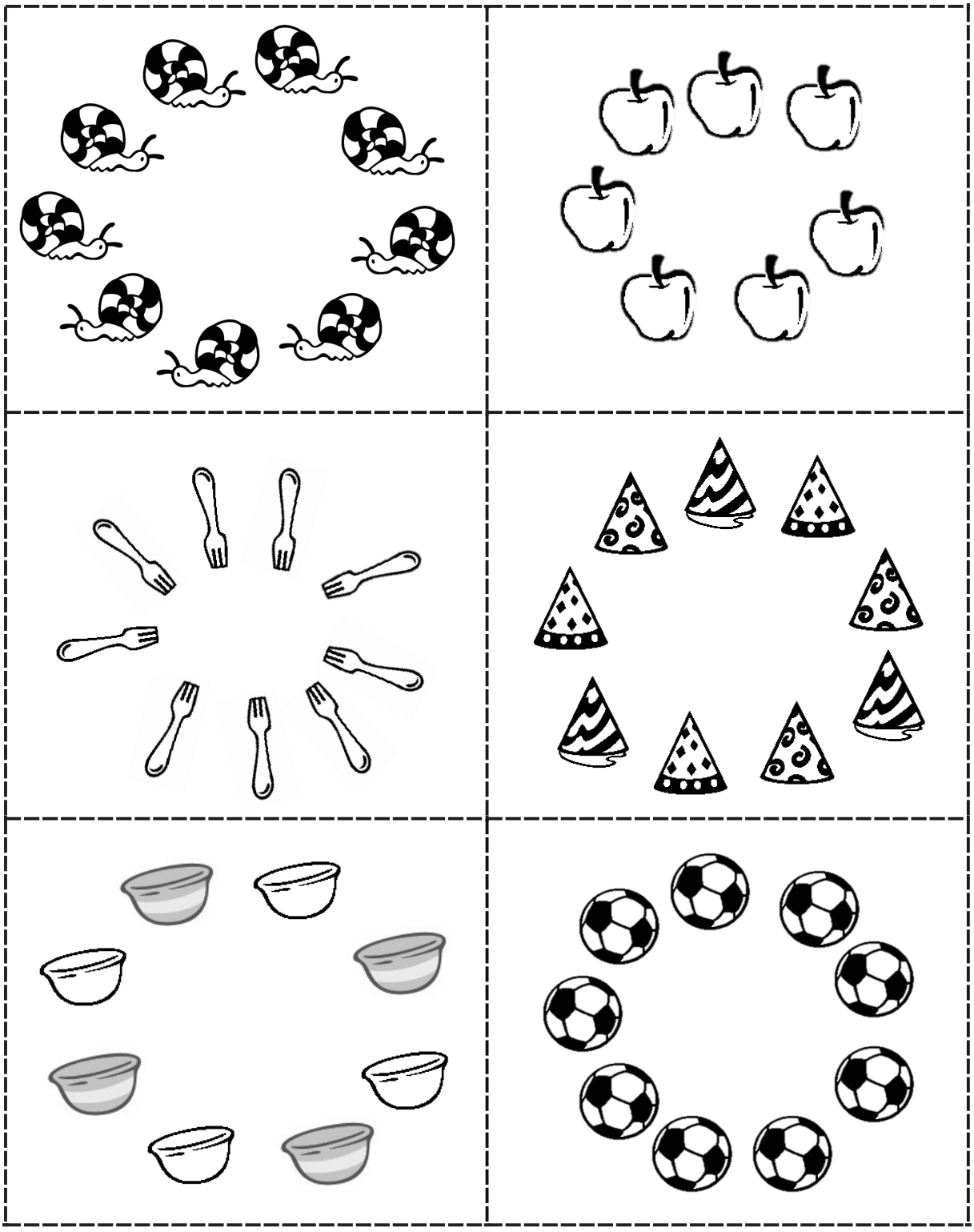


table template

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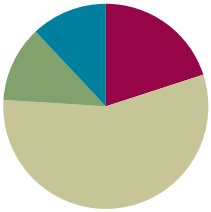
circular configuration cards

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Lesson 28

Objective: Arrange and count 9 objects in varied configurations.

Suggested Lesson Structure



Fluency Practice	(5 minutes)
Application Problem	(3 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (5 minutes)

- Drum 10 Times **PK.CC.1** (1 minute)
- Touch and Count to 9 **PK.CC.3.a** (4 minutes)

Drum 10 Times (1 minute)

Materials: (S) Drumsticks for each student

Note: This fluency activity, which asks students to drum once with each counting word to 10, prepares students for the upcoming objective of touching and counting to 10 Topic G. Be sure to include zero in the counting sequence.

T: We are going to count to 10. I will say a number, and you drum that number of times.
T: Zero
S: (Drum 0 times.)
T: One
S: (Drum one time.)
T: Two
S: (Drum two times.)

Continue the counting sequence to 10.

NOTES ON MULTIPLE MEANS OF EXPRESSION:

On the way to go home, to snack, recess or lunch, the students' marching band can count to 10 over and over as they march. Say, "Wow, we counted to 10 seven times!" This hints at place value and multiplication. Have students make a bigger bang each time they get to ten to support their awareness of the repetition.

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Touch and Count to 9 (4 minutes)

Materials: (S) Tower of 9 with 5 one color and 4 another color

Note: This fluency activity focuses on counting to 9 in anticipation of introducing the number 10 as 9 and *1 more* in Topic G. By using the color change after the fifth cube, the number 9 becomes more accessible, comprised of 2 friendly numbers, 5 and 4. In this fluency activity, however, the composition of the parts is not analyzed as it was in Lesson 27. Students simply count past the color change.

T: (Guide students to be sure their tower is vertical.) Start at the bottom. Touch and count the cubes in your tower as you go up to the tippy top. Use a whisper voice for the bottom color and a big voice for the top color.
S: (Whisper voice) 1, 2, 3, 4, 5 (big voice) 6, 7, 8, 9.
T: Touch and count again, and use a big voice for the bottom color and whisper voice for the top color.
S: (Big voice) 1, 2, 3, 4, 5 (whisper voice) 6, 7, 8, 9.
T: This time use a growling voice for the bottom color and a high voice for the top color.
S: (Growling voice) 1, 2, 3, 4, 5 (high voice) 6, 7, 8, 9.

Show them the numerals 1–9, ask them to say "That's 9," and trace the shape in the air with their finger when the teacher points to the numeral 9.

Application Problem (3 minutes)

Materials: (S) 9 seeds in a small resealable bag

Tell the students that today they have another chance to plant seeds in different ways. Instruct them to try to count the seeds without taking them out of their plastic bags. Encourage them to manipulate the seeds so that they are easy to count. (They use the bags of seeds in the lesson.)

Note: This Application Problem gives students practice in manipulating objects into configurations that are easier to count.

Concept Development (14 minutes)

Part 1: Concept Introduction

Materials: (T) Green construction paper, 9 seeds, numeral card 9 (Lesson 6 Template 2), white board or chart paper

Note: Explain to students that a community garden is a garden that families in a neighborhood or community share. Choose seeds that are large enough for the whole group to see (e.g., sunflower, nasturtium, lima beans).



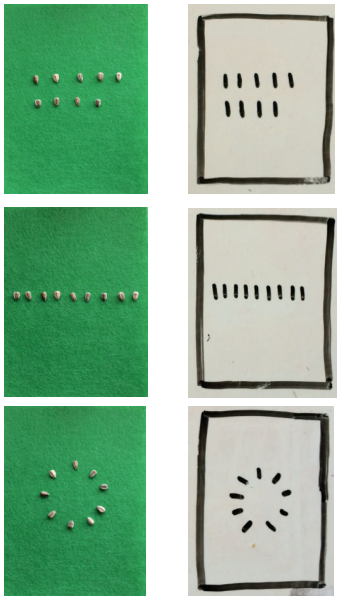


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1. Gather students in a circle around the green construction paper. Say, "Ezra saw Maria's community garden, and now he wants a garden in his neighborhood. Ezra brings 3 seeds to the garden." Enlist a student to help count out 3 seeds, and line them up on the mat.
2. Say, "Two of Ezra's neighbors each bring 3 seeds to the garden." Add each neighbor's seeds in their own line under Ezra's seeds (3 by 3 array configuration), having students count the total number of seeds. Find the matching numeral (9).
3. Say, "Ezra and his neighbors work together to decide how to plant the seeds. They decide to draw each idea to remember it." Draw the array idea, and have children count the seeds in the drawing from left to right to make sure there are 9.

MP.4

4. Say, "Ezra suggests that they make 2 rows instead of 3 rows." Repeat the sequence, moving the seeds, touching and counting, and finally drawing.
5. Say, "Ezra's neighbor says to try making one long row." Repeat the sequence, moving the seeds, touching and counting, and finally drawing.
6. Say, "All of the neighbors get excited when they think about planting the seeds in a circle." Have a student make a circle with the seeds, touching each seed while the class counts. Draw this idea.



Part 2: Practice

Materials: (T) Garden idea drawings (S) Green construction paper, bag with 9 seeds

1. Pair students, and send them to tables with construction paper and a bag.
2. Invite students to choose their favorite garden idea, and arrange their seeds to match. Encourage them to describe their seed layout to their partner.
3. Instruct partners to take turns counting and asking how many questions about each other's seeds.
4. Have them try out a new idea for arranging the seeds. They can use an idea from the drawing or one of their own. Repeat Steps 2 and 3.

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

Adjust the lesson structure for the needs of your students. Some students may need to work at a very concrete level and act out the garden scenarios, pretending to be seeds in Ezra's garden and forming the various configurations. Others may need visual representations readily available while making their own gardens during the practice.

Student Debrief (3 minutes)

Lesson Objective: Arrange and count 9 objects in varied configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

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As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Which idea did you like best? Which one made it easiest to count the seeds?
- (Display 12 objects in a line.) Are my objects in a line or in a circle? (Move them into a circle.) Is the number of objects the same now? (Move them into a 2 by 6 array.) Is the number of objects the same now?
- (Move the objects into a 3 by 4 array.) Is the number of objects the same now? (Remove 1 object.) Is the number of objects the same now?

CENTER CONNECTION:

In the art center, have children choose their favorite garden layout and arrange their seeds. Replace each seed with a drop of glue. Have children create flowers by crinkling their tissue paper and placing one flower on each drop of glue. Have them count the seeds in the original drawing and the flowers in their final art work.

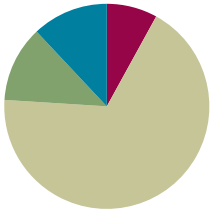
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Lesson 29

Objective: Tally 9 objects.

Suggested Lesson Structure

Fluency Practice	(2 minutes)
Application Problem	(3 minutes)
Concept Development	(17 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (2 minutes)

- March and Count from 0 to 10 **PK.CC.1** (2 minutes)

March and Count from 0 to 10 (2 minutes)

Note: Marching and counting to 10 prepares students for the upcoming objective of touching and counting to 10.

T: Let's count from 0 to 10 and count each march. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Remember, don't march when we count 0. (Repeat until all are marching. Pause between counts.)

Application Problem (3 minutes)

Materials: (T) Numeral cards 4–9 (1 to match each cup, Lesson 6 Template 2) (S) Cup containing 4–9 bee stickers

Distribute a cup to each child, and spread the numeral cards in the center of the circle.



It's time to open up the Pollen Café again! Let's get the bees ready. Find the number that tells how many bees are in your cup.

Circulate and make sure that students are lining up their bees and counting with one-to-one correspondence. Once children have found the correct numeral, have them place it in the cup with the bees.

Note: This Application Problem sets the context for the Concept Development. Create cups with 4–5 bees for students who are still mastering smaller numbers, but have 6–9 bees in most cups.

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Concept Development (17 minutes)

Part 1: Concept Introduction

Materials: (T) Cup containing 9 bee stickers, number path folded to 9 (Lesson 10 Template), paper and crayon (or white board), 9 flowers (S) Paper and crayon (or white board)



1. Select a child to bring the bee customers to the Pollen Café. Give him the cup of bees. Display the number path. Say, "Carefully put the customers in these special bee seats." Help the student place 1 bee in each spot on the number path.
2. Ask, "How many bees did our friend seat in the Pollen Café?" Give students a moment to think before prompting the count. Touch as the class counts. Use self-talk to point out the relationship between the count and the number path: "We counted 9 bees. Look! The last bee is sitting in the chair next to the number 9. That is the same as our count."
3. Tell the students that the teacher is ordering for each bee. Say, "May I have 1 flower please?" in a variety of voices while giving students the chance to tally. Guide them to make 1 tally mark for each order. Review with students when and how to make the "fifth" diagonal tally mark.
4. Say, "Now, the waiter is ready to take the order to the chef!" Take the *order* of 9 flowers back to the customers. Count the flowers with the children, giving each bee a flower as it is counted.

Part 2: Practice

Materials: (S) Cup containing 4–9 bee stickers, number path folded to 9 (Lesson 10 Template), paper and crayon (or white board)

Assign each student to be either the person to seat the bees or a waiter. Distribute the appropriate materials.

1. Have one partner seat the bee customers from their cup on the number path, and then order by saying, "May I have one flower please?" for each bee. Have the waiters tally the flower orders 1 per bee. (If students still need to match 1-to-1 in order to make tallies, allow them to match each tally to a bee as learned in earlier lessons.)
2. Support waiters as they tally the order. Encourage the other partner to count the tally to make sure it matches the order.
3. Have children switch roles, and repeat with a new cup of bees, ensuring that everyone has a chance to practice making tally marks.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Planning other meaningful times in the day that would give students an opportunity to practice tally marks supports effort and persistence (e.g. taking attendance, counting snacks, taking lunch count for a group of students, or tallying the students in a center).

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Student Debrief (3 minutes)

Lesson Objective: Tally 9 objects.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- (Display an example of student work from the Practice, including the number path, bees, and tally.) How could these tally marks help the waiter remember how many flowers to get in the kitchen?
- (Show number path and white board.) What if none of our bees ordered a flower? How would I tally up zero orders?
- (Show number path.) What do you know about 9?

  (Show 9 tallies. Point to the group of 5.) How many tally marks are in this group? (Point to the group of 4.) How many tally marks are in this group? How many tallies would be in the group if I made 1 more tally?

CENTER CONNECTION:

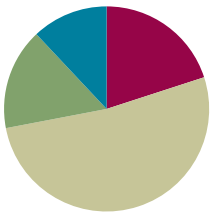
Continue to run the Pollen Café in the dramatic play center. Make sure students take turns seating customers and being waiters so everyone has a chance to practice tallying. Prepare a few bags with flowers (4–9 to match the bees), and include the matching numeral. Waiters can deliver the flowers to the customers.

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Lesson 30

Objective: Look at a numeral and count out a group of up to 9 objects.

Suggested Lesson Structure



Fluency Practice	(5 minutes)
Application Problem	(4 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (5 minutes)

- Play Catch and Count **PK.CC.1** (5 minutes)

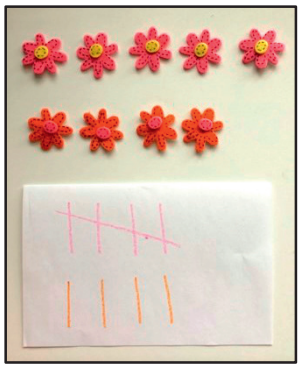
Play Catch and Count (5 minutes)

Materials: (S) Per pair: tightly bundled pair of socks or other soft object

Note: Students count to see how many times they catch the socks in a row without dropping them, giving a meaningful context for counting. Position students about 2 yards apart to start.

T: Let's play catch. Throw the socks back and forth with your partner, and count how many times in a row you can catch the socks without dropping them!

Application Problem (4 minutes)



Materials: (T) 9 bee stickers, 5 pink and 4 orange flowers (S) Paper, pink and orange crayons

Say, "Pick up your pink crayon, and make a tally mark for each bee that orders a pink flower." Use different voices to order for 5 different bees. "May I please have a pink flower?"

Next, have children pick up their orange crayon and tally the order for 4 bees. Again, use different voices to signal each tally. " May I please have an orange flower?"

Count out 5 pink and 4 orange flowers with students. Have them count all of their tally marks on their own and then all the flowers as a group. Do the counts match?

Note: Children are asked to create tallies for 4 and 5. By counting all the flowers and all of the tallies, they see that 5 and 4 are embedded in 9.

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Concept Development (13 minutes)

Materials: (T/S) Cup of 10 flowers, small resealable bag containing the numeral card 9 (Lesson 6 Template 2)

Note: Prepare students for this lesson by explaining to the class that a chef is someone who makes the food at a restaurant or café.

1. Tell students that today the chefs at the Pollen Café must prepare bags of flowers for their customers. They have to count out the correct number of flowers for each bag.
2. Invite children to take the numeral cards out of their bags. Ask all students to name the number and trace it with a finger. Ask, "How many flowers do we need for this bag?" Guide children to respond, "9 flowers!"



3. Dump the flowers from the cup. Count out the correct number of flowers, using self-talk to describe your thinking: "I'll make a line of 9 flowers for this bag. I'll count and stop when I get to 9. 1 flower, 2 flowers, … 9 flowers (place the ninth flower in line). Stop." MP.7
4. Ask students to count, and make sure the flowers match the numeral card. Put the flowers in the bag.
5. Invite children to count out their own line of 9 flowers. Encourage children to say, "Stop!" when they hear the target number. If children are not able to count and keep the target number in their mind, let them use the number path.



Part 2: Practice

Materials: (S) Cup of 10 flowers, small plastic bag containing one numeral card 0 or 4–9 (Lesson 6 Template 2)

1. Distribute one order (one bag) to each chef. If students have not yet mastered counting to 9 with one-to-one correspondence, let them practice making groups with smaller numbers.
2. Tell the chefs to say how many flowers are being ordered (the number in their bag) and to trace it with a finger.
3. Have the chefs count out a line of flowers to match their order. Encourage students to use the dots on the back of the cards if they need to match one-to-one to make a group.
4. When they have correctly completed an order, the chefs may get another order and repeat steps 2 and 3, reusing the same flowers.
5. As students work, circulate and describe what they are doing, using parallel talk. For example, "Rachna's order had the number '0,' so she didn't put any flowers in the bag. Will stopped putting flowers in a line when he got to 9."

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

If children have trouble remembering to stop at 9, provide a visual cue. They might start by counting out a group using the number path with the number 9 circled. Once they can do that successfully, remove the number path, and show only the target numeral.

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Student Debrief (3 minutes)

Lesson Objective: Look at a numeral and count out a group of up to 9 objects.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Could you add as many flowers as you wanted to your order? How did you know when to stop putting more flowers in the order?
- (Show 9 flowers, 9 tallies, the dot configuration for 9, and the numeral 9. Do the same with other quantities, based on students' needs.) Which of these tells how many flowers I have? (Help students realize that all of these represent the same number.)

  Watch as I count out 9 flowers. (Place one flower down with each count.) 1, 2, 3, 4, 5, 7, 8, 9. What mistake did I make? (Have a student correctly count out 9 flowers.)

CENTER CONNECTION:

Continue to set up the dramatic play center as Pollen Café. As children play today, have the chefs create a group of flowers based on the number requested by the waiter instead of relying on pre-prepared bags.
If students are ready for an additional challenge, allow bees to choose from 2 different color flowers.

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Topic G

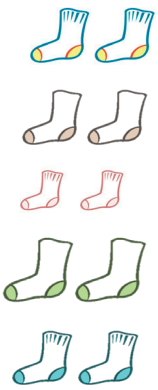
How Many Questions with up to 10 Objects

PK.CC.1, PK.CC.3.abc, PK.CC.4

Focus Standards:	PK.CC.1	Count to 20.
	PK.CC.3.abc	Understand the relationship between numbers and quantities to 10; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. c. Understand that each successive number name refers to a quantity that is one larger.
	PK.CC.4	Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects.
Instructional Days:	4	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

Topic G continues the pattern established in Topics A, C, and E. Lesson 31 begins with students counting out 9 orange slices in horizontal 5-group formation. They get 1 more orange slice and then touch and count 10 slices (**PK.CC.3.c**). When the orange slices are eaten, the children count 0 orange slices.

Lesson 32 uses the explorer crossing the creek context one last time. Students see that they need more rocks to cross this time, as opposed to the 2 rocks in Topic A, because these rocks are smaller. As students proceed to Lesson 33, they now count from 0 to 10 from left to right on their fingers using the familiar chick-hatching context.



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In Lesson 34, children work with arrays in the context of sorting laundry. First, they arrange 8 socks in a 4 by 2 array. Next, they add a pair of socks to form another row, counting to 10 in a 5 by 2 array. Finally, students work with 5-groups as an array configuration and practice counting by "feeding" each animal (with a linking cube) on an array card.

Throughout Topic G, children develop fluency counting with one-to-one correspondence through 10, experiencing numbers 6 through 10 in relationship to 5. In anticipation of Module 5's work with addition and subtraction, students continue to play with decomposing and composing numbers to 10. They also work to find *1 more* and *1 less* within 8.

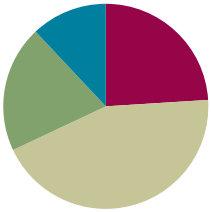
A Teaching Sequence Toward Mastery of *How Many* Questions with up to 10 Objects	
Objective 1:	**Introduce 10, and relate 10 to 9 and *1 more*. (Lesson 31)**
Objective 2:	**Use linear configurations to count 10 in relation to 5. (Lesson 32)**
Objective 3:	**Count from 0 to 10 from left to right with fingers. (Lesson 33)**
Objective 4:	**Count 10 objects in array configurations. (Lesson 34)**

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Lesson 31

Objective: Introduce 10, and relate 10 to 9 and *1 more*.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(5 minutes)
Concept Development	(11 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Count Jumps and Pats from 0 to 10 **PK.CC.1** (2 minutes)
- Decompose 9 **PK.CC.3.ab** (4 minutes)

Count Jumps and Pats from 0 to 10 (2 minutes)

Note: Counting jumps/pats from 0 to 10 prepares students for the lesson's objective of touching and counting to 10 and contextualizes zero in the count sequence.

T: Let's count jumps from 0 to 10. Here we go. We say "zero" when there are no jumps yet. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. (Repeat until all are engaging at some level with the activity.)

T: Let's count pats from 0 to 10. (Model patting the top of the head.) Ready? 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. (Same process as above.)

Decompose 9 (4 minutes)

Materials: (S) 5 loose cubes of one color and 4 of another color. (Vary the colors from earlier fluency activities so that students do not come to believe that 5 is always one particular color.)

Note: Moving forward from Lesson 28, today's fluency activity decomposes 9 into a tower of 5 and 4. Notice who counts the number of cubes in each part. While circulating, whisper, "How many cubes are in this short tower? This one?" and other questions.

T: Open your bags, and make one tall tower with all the cubes of one color touching.

S: (Do so.)

T: Count the number of cubes in your tall tower.

S: (Do so.)

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T: Break your tower into parts by color.
S: (Do so.)
T: Put your tall tower back together.
S: (Do so.)

Application Problem (5 minutes)

Materials: (T) 10 pieces of bread or 10 pieces of brown construction paper if real bread is unavailable (as slices of bread)

Place a plate with 10 *slices of bread* in the center of the circle. Say, "Let's pretend we are making sandwiches at Simon's Sandwich Shop."

T: How many slices of bread do we use to make 1 sandwich?
S: 2.
T: (Lay 2 slices down next to each other.) Do I have bread for more sandwiches?
S: Yes!
T: (Lay 2 slices down next to each other.) I'll touch, and you count the slices.
S: 1, 2, 3, 4.

Continue the pattern until 9 slices of bread are laid down.

T: Oh, no! What do I need to make my last sandwich?
S: Another piece of bread. → 1 more slice.
T: Here is one more! (Count the total number of slices of bread with students.)
T: (Put pairs of slices together to make 5 pretend sandwiches in a line.) Wait for the signal to tell me the answer to this question. How many sandwiches did I make with my bread? (Pause as students count in whatever way they choose. Give the signal when they are ready.)
S: 5.

Note: This task serves as a introduction to today's objective of seeing 9 and 1 more is 10.

Concept Development (11 minutes)

Part 1: Concept Introduction

Materials: (T) Orange slices or orange slice template if oranges are not readily available (Template cut apart)



1. Tell students, "We have orange slices for snack time today! Let's count how many slices there are." The teacher guides students to count as she places the orange slices in a 5-group formation (as pictured to the right). "1, 2, 3, 4, 5, 6, 7, 8, 9."

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2. Say, “Wait! There’s 1 more slice.” Show the slice, and have students count as the teacher touches each one: “1, 2, 3, 4, 5, 6, 7, 8, 9, 10. 10 slices.”
3. Touch the last slice and ask, “What is 9 and 1 more?” “10.” Tell students, “Let’s count again. I’ll touch as you count. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.”
4. Ask, “How many slices are there?” Lead students to use a complete sentence, “There are 10 slices.”
5. Say, “Yes! So, 9 and 1 more is… (point to the last orange)?” “10.”
6. Tell students, “Let’s put these away until snack time.” Once all slices are away, show empty hands, and guide students to say how many there are, “0 slices.”

Part 2: Practice

Materials: (S) per pair of students: small resealable bag with 9 orange slices (Template cut apart), one additional slice for each pair.

Before sending partners to tables, place the bag with 9 orange slices at Partner A’s seat.

1. Say, “Let’s pass out the orange slices for snack time! Let’s count how many slices there are in your bags. Partner A, put 5 slices in a line.”
2. Invite Partner B to put the rest of the slices in the bag in a line right under his friends. Invite the partners to count all the slices. “1, 2, 3, 4, 5, 6, 7, 8, 9. 9 slices.”
3. Say, “But let’s say there are 10 students who want a slice. How can you make the number of slices change from 9 to 10? What do you need to do? Tell your partner.” Guide students to see that they need 1 more slice. Pass out the additional slice so they can make 10.
4. Say, “Touch and count the slices now.” “1, 2, 3, 4, 5, 6, 7, 8, 9, 10. 10 slices.”
5. Say, “You had 9 orange slices, and you added…?” “1 more.” Have students repeat, “9 and 1 more is 10.”
6. Invite students to *eat* the slices by taking them off the plate and to count *0 slices* when they are all gone.
7. If possible, serve orange slices at snack time arranged on plates in arrays.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Students develop a deeper understanding of math concepts as they apply them in a variety of settings. Therefore, facilitate the discovery of 1 more in the classroom environment. They may discover this when counting blocks in the building area, during calendar time, lining up to go to the playground, or using their fingers to count.

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Student Debrief (3 minutes)

Lesson Objective: Introduce 10, and relate 10 to 9 and *1 more*.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief.

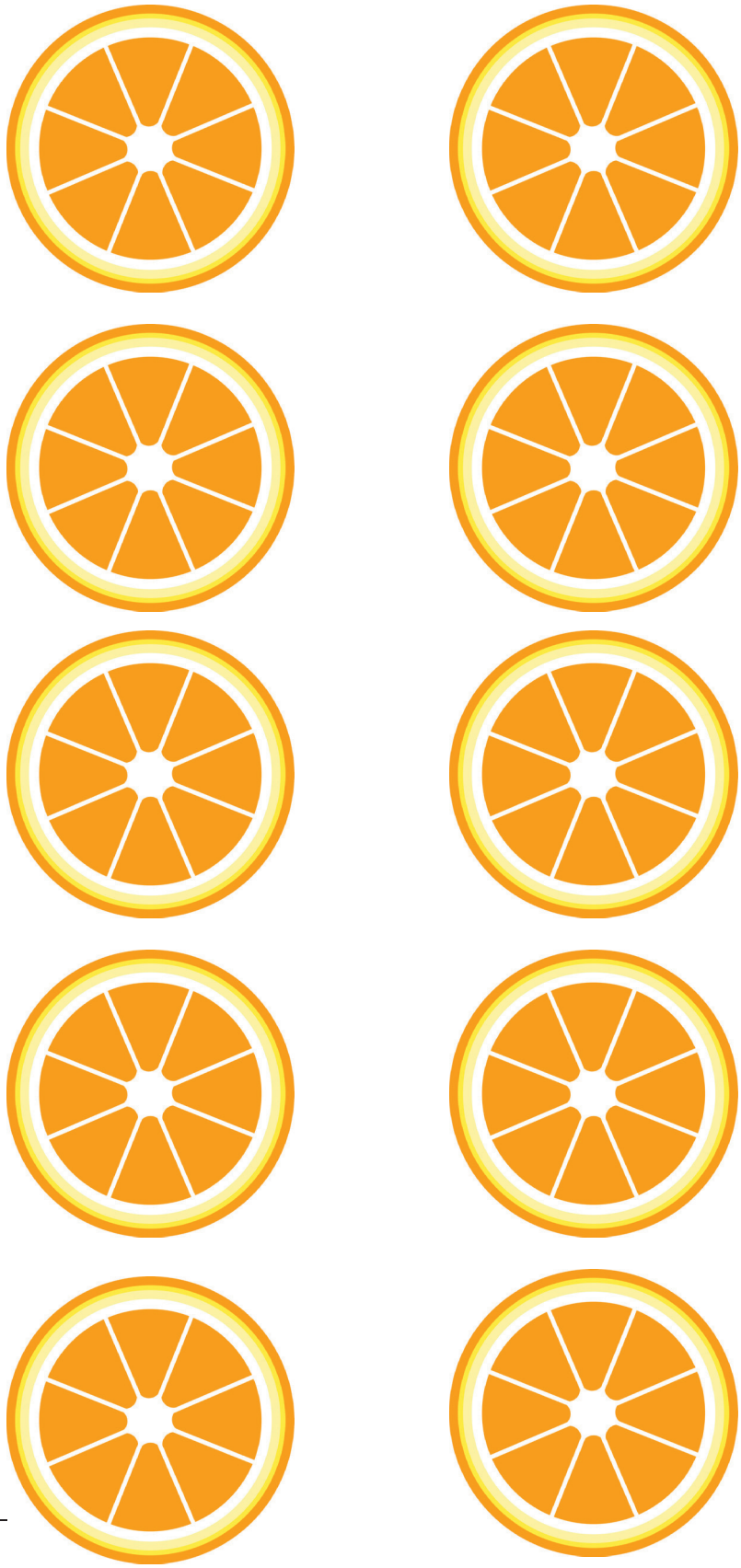
Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Close your eyes, and picture the orange slices. Do you remember how many slices you counted at first? What did you notice when you put the 9 slices out? How did you change 9 slices to make 10?
- What is 9 with 1 more? Do you need to count to answer that question? Can you just remember the answer?
- Let's see which of these answers you know now. (Show 5 fingers.) "What is 5 and 1 more?" (Pause, give time to respond, pop up one finger.) Yes! Six. (Continue to show 6 fingers.) "What is 6 and 1 more?" (Continue the pattern to 10.)

CENTER CONNECTION:

In the kitchen center, consider having students make a *fruit plate* by cutting each piece of paper fruit into 2 smaller pieces: red ovals for strawberries, yellow circles for grapefruits, orange circles for oranges, green circles for apples. Guide them to cut each piece of fruit into 2 parts, and count how many pieces of fruit are on each plate!

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orange slices

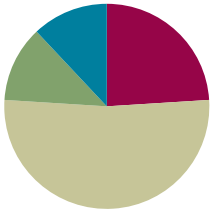
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Lesson 32

Objective: Use linear configurations to count 10 in relation to 5.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Count to 10 **PK.CC.1** (1 minute)
- The Wind and the Trees! **PK CC.3.abc** (5 minutes)

Count to 10 (1 minute)

Note: By moving from loud to silent counting, students may start to realize they can count *inside their brains* without being heard.

T: Count to 10 for me so that I can hear you.
S: (Do so.)
T: Count to 10 for me so that I almost can't hear.
S: (Do so.)
T: Count to 10 so I can't hear.
S: (Do so.)
T: Close your eyes, and count to 10 without moving your lips. (Provide wait time.)
T: I can count in my mind, and no one hears me or sees me counting.

The Wind and the Trees! (5 minutes)

Materials: (S) Small resealable bag with 10 manipulatives, (i.e., dominoes or blocks)

Note: This fluency activity allows students both to count 10 *trees* and revisit zero.

T: Let's pretend that we are gardeners planting trees. There are some trees in our truck. How many trees have we planted?
S: Zero. → None. → Not any.

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T: Let's take 10 trees out of the truck and lay them flat. (Pause.) Let's plant 10 trees in a short line. (Demonstrate *planting a tree* by standing up the blocks facing each other.) What is the last number you said?

S: 10.

T: How many trees are planted?

S: 10.

T: A big wind came and knocked one tree down so that it knocked all the others down! (Tap the last tree so that it knocks the other trees down.) How many trees are standing up now?

S: Zero. → None. → Not any.

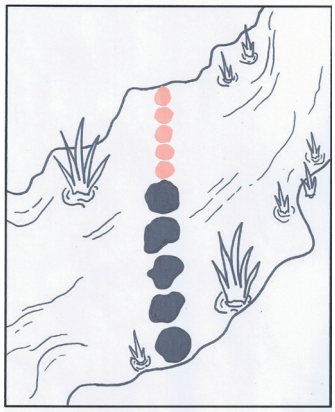
Application Problem (3 minutes)

Materials: (T) Backpack (S) 10 black manipulatives (cubes or dominoes), bag

Say, "Pretend you and your friends are going camping, and the leader needs charcoal (hold up a domino) to grill some fish. Make a decision about how many pieces of charcoal to bring, and put that many in a line. (Pause.) Tell your partner how many you are bringing. (Pause.) Count your partners' charcoal pieces to be sure they are bringing the right number. (Pause.) Put them in your bag, and I'll collect them for the class backpack. We are going to have some gooood fish!"

Note: This Application Problem asks students to determine for themselves how many pieces of charcoal they will contribute. Observe the choices and those who struggle either to decide or to remember their decision once they start to count. Also, check for understanding of the vocabulary included as the context of this problem (e.g., camping or charcoal.)

Concept Development (13 minutes)



Part 1: Concept Introduction

Materials: (T) Creek mat (Lesson 2 Template), 5 small round stickers, explorer figurine (optional)

Gather children in a circle around the creek mat.

1. Say, "A different explorer has reached the same creek that her friend crossed before, but all the extra rocks washed away. Only smaller rocks are left!" Point out the line of rocks. Ask a volunteer to move the explorer across each rock while the class counts, "1, 2, 3, 4, 5."
2. Ask, "Do you think the explorer could reach the other side if there was 1 more rock?" Say, "Pretend this is a rock." Add 1 sticker to the line.
3. Ask, "How many rocks are there now?" Have another volunteer move the explorer across each rock while the class recounts 5 with 1 more, "1, 2, 3, 4, 5, 6. There are 6 rocks."
4. Say, "We had 5 rocks, and we added…?" "1 more." Say, "Now, we have 6."

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5. Ask, “Is she there yet?” “No!” “Let’s put another rock.” Repeat Steps 2–5 to count 7, 8, 9, and then 10 rocks.
6. Ask, “How many black rocks were there?” Challenge students to ask a *how many* question about the new rocks. Guide students to notice the size of the new rocks.
7. Ask, “How many rocks did the explorer walk on to cross the creek?” Students recount to 10.

Part 2: Practice

Materials: (S) Creek mat (Lesson 2 Template), 10 small counters or stickers

Send children to prepared tables.

1. Tell students, “It’s your turn to help the explorer cross the creek.”
2. Say, “First, take out your counters, and cover the rocks in the creek. Tell your partner how many rocks are in the line.”
3. Say, “Now, put 1 more rock in the line.” MP.6
4. Guide students to count the covered black rocks, count the new rocks, and then count *all* the rocks each time they put 1 more in the line. Instruct them to ask and answer *how many* questions.
5. Repeat Steps 3 and 4 so that there are 7, 8, 9, and then 10 rocks. Celebrate the explorer’s crossing.



NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Cultivate excitement by providing a challenging extension for students who are ready. Partner students who are ready for a challenge, and have each partner complete the practice activity with different-sized stickers. Have students compare their results and determine why they each used a different number of stickers.

Student Debrief (3 minutes)

Lesson Objective: Use linear configurations to count 10 in relation to 5.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child’s progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- How many rocks were in the creek at first? What did you need to do to help the explorer to cross the creek?

CENTER CONNECTION:

At the block center, give each child 5 of one type of block and 5 of a different type of block (e.g., 5 rectangular blocks and 5 triangular blocks). First have them line up their 10 blocks and count. Then, have them build with their 10 blocks. Compare the structures, and help the children count the number of blocks in each structure. Notice that all the structures are different, but each has 10 blocks.

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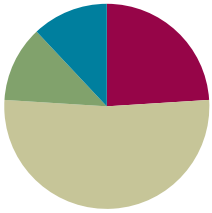
- Count the black rocks. (Pause as students count.) Count the new rocks. (Pause.) Count *all* the rocks. (Pause.) How many did you count altogether?
- (Show the creek template, the large counters used in Lesson 2, and the small counters used in this lesson.) The first explorer to cross the creek only needed 2 more rocks. (Demonstrate.) The last explorer to cross the creek needed 5 more rocks. (Demonstrate.) Why did they need a different number of rocks?

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Lesson 33

Objective: Count from 0 to 10 from left to right with fingers.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Change of Pace Counting from 0 to 10 **PK.CC.1** (2 minutes)
- Use *1 More* to Make a Tower of 10 **PK.CC.3.c** (4 minutes)

Change of Pace Counting from 0 to 10 (2 minutes)

Materials: (T) 10 small paper plates

Note: By using a change of pace, students start to retain the number words for longer periods of time, helping them to remember what is 1 more, which lays the foundation for *counting on* in Grade 1. If paper plates are unavailable, cubes are a good substitution and can be reused in the next fluency activity.

T: Let's set a table for 10 people today. (Place 2 rows of 5 plates on each side of the table.) Only say the number when the plate touches the carpet. (Hover the first plate over the *table*.) How many plates are on the table now?

S: Zero.

T: (Place the first plate.) Now?

S: 1.

T: (Place the second and third plates quickly.)

S: 2, 3.

T: (Pause significantly before placing the fourth and fifth quickly. Again, there should be laughter and false starts.)

Continue changing the pace up to 10 plates.

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Use *1 More* to Make a Tower of 10 (4 minutes)

Materials: (S) 10 loose cubes with 5 of one color and 5 of another color

Note: Observe, rather than direct, students. Note that the directions do not indicate to separate the colors. Notice that *taller* is embedded informally, preparing students for Module 4.

T: Open your bags, and take out 0 cubes to start your tower.

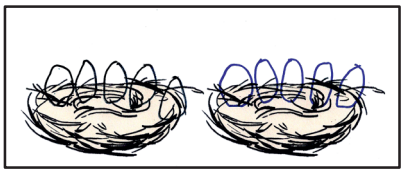
T: Put together 5 cubes. Use 1 more cube to make your tower taller.

T: Take out 1 more cube. Put 1 more cube to make your tower taller. How many cubes does your tower have now?

Continue the process until the tower reaches a height of 10 cubes. Have students compare their towers and notice the possible differences in their appearances.

Application Problem (3 minutes)

Materials: (S) Problem Set, 1 brown and 1 blue crayon



Give each student a Problem Set with two nests drawn on it. Say, "5 eggs are in a nest. Use your brown crayon to draw a line of 5 eggs in one nest." (Pause.) "There are 5 more eggs in another nest. Use your blue crayon to draw the 5 eggs in the other nest." (Pause.) "Count how many eggs are in the two nests."

Note: This is a repetition of almost the same context from Lesson 24 in Topic E. This repetition allows students to focus more on the number relationships. The crayon colors are changed from Lesson 24 so that students do not overly relate 5 with the color green and the *extras* with the color red.

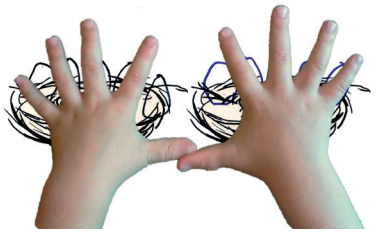
Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (S) Problem Set from Application Problem

Note: Remember to demonstrate with the right hand first if standing or sitting in front of the children.

1. Say, "It's almost spring, and all the baby chicks (wiggle fingers) are warm inside their eggs inside their nests (make 2 fists on a surface)."
2. Say, "When spring comes, the chicks in the brown eggs hatch first and stand up." Demonstrate the first 5 hatching and standing up, starting with the pinky (left to right starting from the pinky and moving to the thumb of the left hand). Have the children count the chicks as they emerge, "1, 2, 3, 4, 5."



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3. Say, “There are more chicks hatching in the nest with the blue eggs! (Shake the right fist.) Five of them hatch and stand.” Have 5 more chicks come out by showing the thumb, index finger, middle, ring finger, and pinky of the right hand.
4. Say, “Let’s count how many chicks have hatched.” To support a precise count, lift fingers off the surface, and drop them as students count, “1, 2, 3, 4, 5, 6, 7, 8, 9, 10.”
5. Have the children show their nests and eggs. Have them pretend all the chicks are in the eggs in the nests again (2 fists), and then count 10 chicks hatching again, starting with the pinky.
6. Ask them how many eggs are still in their nests. Help them see that there are 0 eggs left. All the eggs hatched so children can show all 10 of their fingers.

Part 2: Practice

Materials: (S) Problem Set, crayon

Send students to prepared tables.

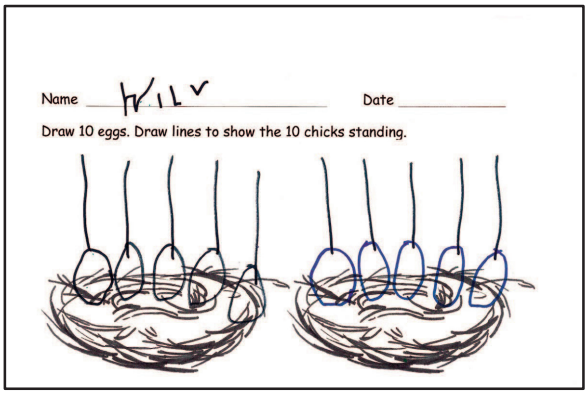
1. Have students make their fists on top of the nests of the Problem Set. Tell them, “Ten chicks (fingers) hatch and stand, one at a time.” Have them count from left to right as they show each finger.
2. Have students draw to show each chick that hatches. (Demonstrate one possible way of showing this by drawing a line from each egg .)
3. While circulating, ask questions such as, “How many chicks hatched?” “How many are still in eggs?” “How many chicks hatched in this nest? This one?” “Who was the first chick to come out? Who was the last?”

MP.6

4. Ask the children to show their partner two ways to count the chicks who hatched, by touching and counting using their picture and by counting on their fingers.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

As an extension activity students could work with a partner to play a game with plastic eggs and chicks (paper cut-outs). Partner A places eggs in a nest (a bowl or basket). Partner B opens each egg and counts the chicks as Partner A tracks the count on his or her fingers. Partners should alternate between the role of partner A and partner B.



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Student Debrief (3 minutes)

Lesson Objective: Count from 0 to 10 from left to right with fingers.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Show me your two nests. (Students show 2 fists.) Show me all the chicks standing. (Students show all their fingers.) On your fingers, show me the chicks that were in the brown eggs. Show me the chicks that were in the blue eggs. All the eggs?
- (Display a completed Problem Set while children continue to show 10 fingers.) How is your picture of the chicks that hatched like the 10 fingers you are showing?
- (Show numeral cards 0, 1, and 2.) Which number tells how many eggs are still in the nests?
- Let's count to 5 using our fingers. Now, let's count to 10. What is different about counting to 5 and counting to 10? How are they the same?

CENTER CONNECTION:

In the art center, have students pretend that their fingers are 10 little chicks. Allow them to dip each finger in finger paint and drop them on the paper, starting from the left pinky. Invite them to count the marks on the paper. Then, have the 10 little chicks dance around the paper.

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Name _____ Date _____

Draw 10 eggs. Draw lines to show the 10 chicks standing.



Name _____ Date _____

Draw 10 eggs. Draw lines to show the 10 chicks standing.



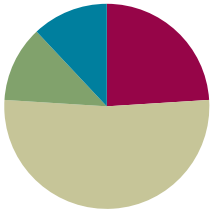
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Lesson 34

Objective: Count 10 objects in array configurations.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Change of Pace Counting from 0 to 10 **PK.CC.1** (2 minutes)
- Compose a Tower of 10 **PK.CC.3.c** (4 minutes)

Change of Pace Counting from 0 to 10 (2 minutes)

Materials: (T) 10 small paper plates, 10 forks

Note: By using a change of pace, students also learn to pay attention to the precision of the *touch* and the *count*.

T: (Place the 10 plates as if at a rectangular table.) Who remembers how many plates we set yesterday?
S: Not me! → 10.
T: How many forks are already on the table?
S: 0.
T: Let's count a fork for each plate so the guests can eat birthday cake!
S: 1, … 2, … 3, … 4, … 5, … 6, … 7, … 8, … 9, … 10.

As in Lesson 33, use a change of pace starting with zero, while counting out the forks for each plate. Don't let students count ahead of the placement of each fork. Keep it playful and fun!

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Compose a Tower of 10 (4 minutes)

Materials: (S) 10 loose cubes in one color

Note: This adds a degree of complexity in that the cubes are all the same color, making it harder to count.

T: Use all your blocks to make 2 towers that are exactly the same. (Pause and observe.)
T: Put your 2 small towers together to make 1 tall tower. (Pause and observe.)
T: Break your tower again into 2 towers that are exactly the same. How many cubes are in 1 small tower? (Pause and observe counting strategies.)
T: Put your tower together again. Touch and count to find how many cubes there are in all. (Pause and observe counting strategies.)

Application Problem (3 minutes)

Materials: (S) Per pair: 1 paper, 1 purple and 1 green crayon

T: Partner A, draw 5 eggs in a line with your purple crayon.
T: Partner B, draw 5 eggs in a line with your green crayon.
T: Count all the eggs.
T: Turn your paper upside down. Count the eggs now!
T: Are there more eggs? Fewer eggs? The same number of eggs?

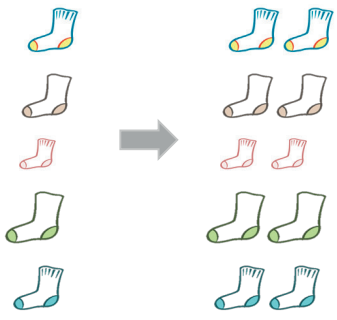
Note: This problem is designed for students to count 10 with a small taste of the commutative property, so that the total doesn't change when the order of the groups is switched.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) 5 pairs of clean socks, dot cards 8–10 (Template 1)

1. Line up 5 socks without their partners, as shown on right. Say, "Last time I did the laundry, I had all these socks with no matches!" Have children count and tell how many socks have no match.
2. Show students the 5 matching socks in a pile. Say, "When I did the laundry this morning, I found more socks. Can you help me find their matches?" As children find matches, make sure pairs stay in an array configuration as shown on right.



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3. Say, "Help me count my clean socks." Point to each sock as children count to 10, moving from left to right, top to bottom. Reinforce that the last number said was the total by asking, "How many clean socks are there?"
4. Place the Dot Cards with the rows of 2 going vertically. Ask children to point to the card with 10 dots to match the socks. As necessary, count the dots on each card. If students do not need to count, ask them to share how they knew which card had the same number of dots as socks.
5. Mix up the Dot Cards, and place them with the rows of 5 going horizontally. Repeat the process in Step 4.
6. Consider saying, "Hey, changing the position of the Dot Card didn't change the number of dots, like when we turned the nest upside down, the number of eggs stayed the same!"



NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

Allow an adequate amount of wait time for students to find the correct dot card. After providing wait time, have a student who needs practice with touching and counting each dot model for the class.

Part 2: Practice

Materials: (S) Per pair: 10 linking cubes from Fluency, animal array cards (Template 2)

Keep students in a circle for easy passing of cards. Pair students, and give each pair 10 linking cubes and an Animal Array Card.

1. Say, "We are going to be zookeepers again. Pretend these cubes are food."
2. Have Partner A count the animals on the card and tell Partner B how many pieces of food are needed.
3. Tell Partner B, "Each animal on your card gets 1 piece of food. Count the food as you give each animal 1 piece." Support students to count accurately as they match each piece of food to an animal.
4. Have partners switch roles. Have each pair pass their card to the right and repeat. Consider supplementing early finishers with extra cards since the time students use to count may vary considerably.

Student Debrief (3 minutes)

Lesson Objective: Count 10 objects in array configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief.

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Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

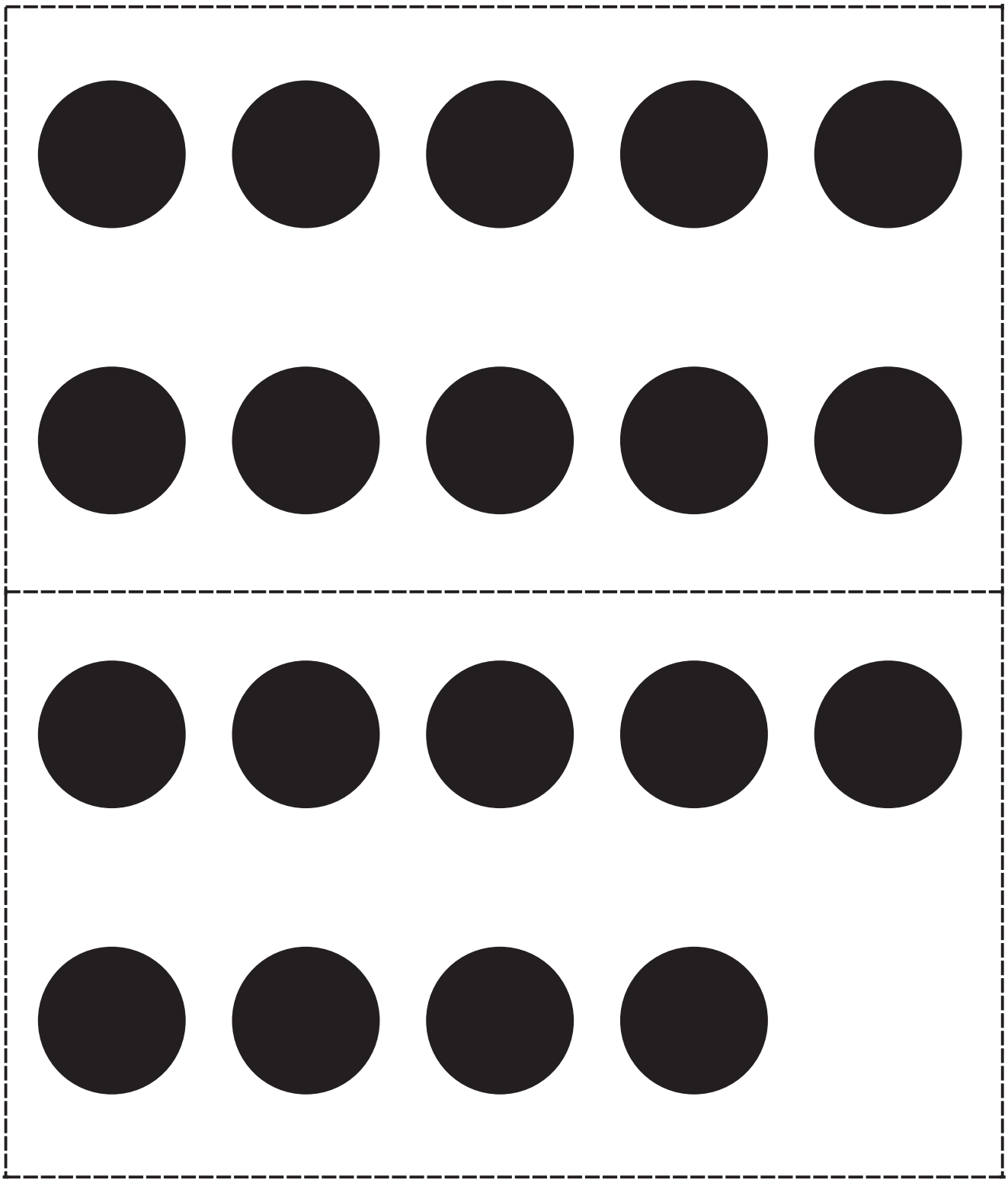
- (Show Animal Array Cards with 8, 9, and 10 animals.) What is different about all of these cards? (Help children consider the total number of animals, the number of rows/columns, and the number of animals in each row/column.)
- (Show the elephant card with only 9 linking cubes.) How many more pieces of food do I need? How do you know? How many pieces of food should be in each row? (Point so that students are clear as to what is being called a row.)
- (Show the elephant card and the 5-group formations for 8-10.) Which of these dot cards matches our elephants? How do we know that?

CENTER CONNECTION:

Have children take 5 pairs of socks from the Concept Development and build or draw an imaginary animal with 5 legs on one side of its body and 5 legs on the other. Have them place the socks on each leg and count to 10.

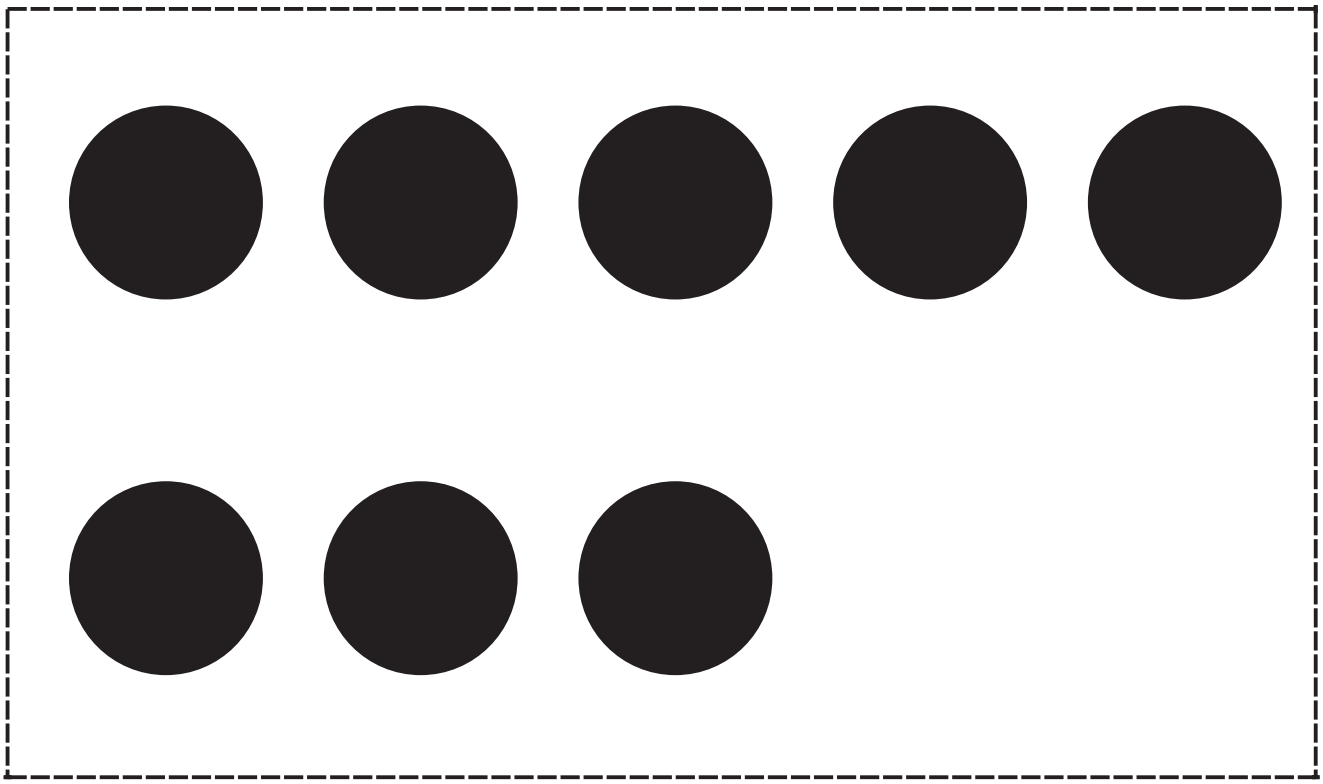
Note the difference in asking for 5 legs on each side of the body (count out 5 twice) and for 10 legs total (count out 10). Children learn to create a group of 10 from a larger set in Lesson 41.

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dot cards 8–10 (5-group formation)

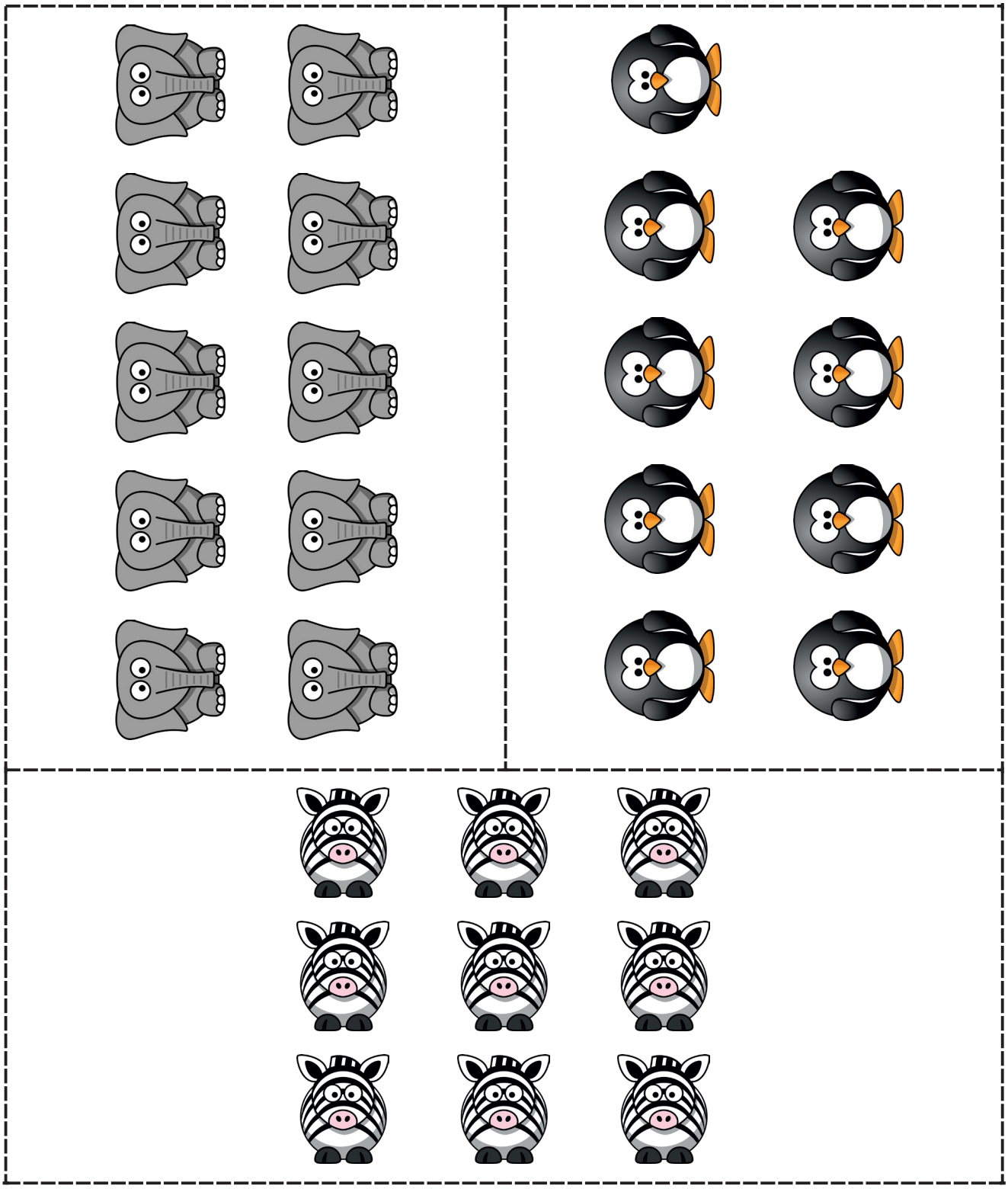
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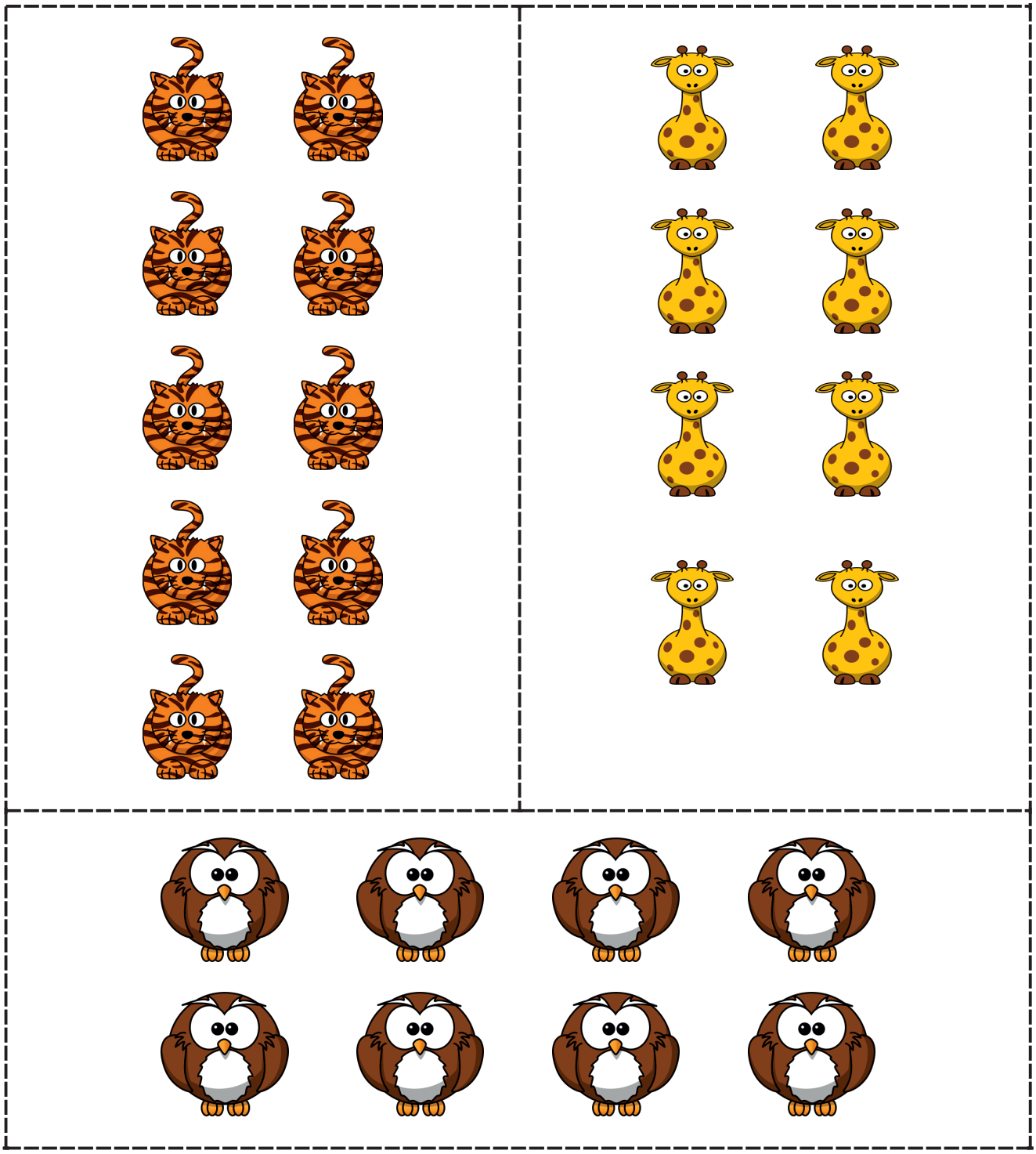
dot cards 8–10 (5-group formation)

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animal array cards

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animal array cards

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Topic H

Matching One Numeral with up to 10 Objects

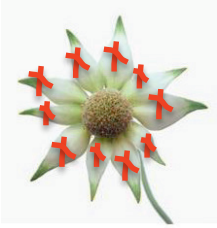
PK.CC.3ab, PK.CC.4

Focus Standards:	PK.CC.3	Understand the relationship between numbers and quantities to 10; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
	PK.CC.4	Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects.
Instructional Days:	8	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

Topic H follows the instructional path laid out in Topics B, D, and F, with children matching groups of up to 10 objects to the numeral that tells *how many* (**PK.CC.4**). As in previous topics, the numerals are prewritten.

Lesson 35 introduces the numeral 10 as children practice decomposing and composing 10. As before, children use puzzles to understand that 10 can be broken into parts or made from parts. In Lesson 36, students manipulate dinosaurs between two locations at a dinosaur pre-school. Tallies are used to keep track of the number of dinosaurs in each place. This playful context provides children with additional practice exploring the idea that a number (6–10) can be decomposed in different ways.

In Lesson 37, children count groups of 10 puppies and flower petals in circular configurations and match the numeral that tells *how many*. They use pictures to practice this skill, for example, carefully marking each petal as they count to 10. Lesson 38 carries forward the context from Topic F wherein up to 10 seeds are arranged in varied configurations and the amounts matched to numerals (**PK.CC.3.b**). Then, in Lesson 39, students play bingo, matching a given numeral to different pictorial representations of the numbers 0–10 on their bingo boards.



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In Lesson 40, children return to being waiters in the Pollen Café, using tallies to record the number of orders from their customers. In Lesson 41, children synthesize their learning throughout the module as the Pollen Café comes to life with children acting out the roles of both waiters and chefs. The waiters communicate the number of orders to chefs using numerals. The chefs, in turn, prepare the correct numbers of flowers for the customers. The waiters count to verify the accuracy of the chefs' preparations (**PK.CC.4**).

The final lesson is a culminating experience in which children add to the number books they created in Module 1, matching numerals 0, 6, 7, 8, 9, and 10 to objects and pictures. After that, they create a library display of their books to share with the class and school community.

Topic H fluency activities focus on 10: Students count 10 jumps, 10 paper clips, towers of 10, or 10 in an array configuration. They also practice composing and decomposing 10. Children continue to count with the fingers on the left hand, then adding "some more" with the right hand.

A Teaching Sequence Toward Mastery of Matching One Numeral with up to 10 Objects	
Objective 1:	**Compose 10, and decompose into two parts. Match to the numeral 10. (Lesson 35)**
Objective 2:	**Decompose numbers 6–10. (Lesson 36)**
Objective 3:	**Arrange and count 10 objects in circular configurations. (Lesson 37)**
Objective 4:	**Count up to 10 objects in varied configurations. (Lessons 38–39)**
Objective 5:	**Tally 10 objects. (Lesson 40)**
Objective 6:	**Look at a numeral and count out a group of up to 10 objects. (Lesson 41)**
Objective 7:	**Culminating Task—represent numbers 6–10 using objects, images, and numerals in a number book. (Lesson 42)**

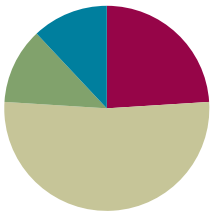
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Lesson 35

Objective: Compose 10, and decompose into two parts. Match to the numeral 10.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Count 10 Jumps **PK.CC.3.a** (2 minutes)
- Match and Count 10 Cubes **PK.CC.4** (4 minutes)

Count 10 Jumps (2 minutes)

Note: This fluency activity lets students have fun with big motions as they count.

T: Let's pretend we are kangaroos and jump 10 times. Join in when you are ready! (Repeat until all are participating.) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

While keeping it playful, do not let students count ahead of each jump.

Match and Count 10 Cubes (4 minutes)

Materials: (S) 10 cubes, 4 of one color and 6 of another



Note: In this fluency activity, students are given the opportunity to practice counting 10 objects in an array configuration.

T: Match a pair of cubes by color. (Pause.) Match another. (Pause.) Keep matching until all your cubes are in pairs by color.

T: Put your cubes like this. (Demonstrate as pictured to the right.) Count all the cubes. (Observe their counting strategies.) How many did you count?

S: 8. → 9. → 10.

T: Hmmm. There should be exactly 10. Try again, and be sure to touch and count carefully.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Check for understanding of the term *pair*. Model matching a pair of cubes for students who may be struggling with the vocabulary.

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Watch carefully to know who is able to count to 10 correctly. Support students as needed, and possibly have another student demonstrate counting correctly.

Application Problem (3 minutes)

Materials: (S) 10 cubes from Fluency Activity, Match and Count 10 Cubes

Have students take apart their 10 cubes from the fluency activity and pretend each cube is a tennis ball. "Make a can of 3 tennis balls that are the same color." (Pause.) "Make another." (Pause.) "Make another." What do you notice?



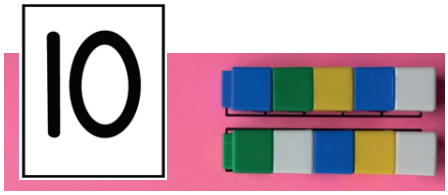
Note: Changing between twos in the fluency activity and threes in the Application Problem allows students to make some important informal observations about the number 10. "When we make pairs of cubes, there are no leftovers. When we make cans of tennis balls, there is 1 leftover!"

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) 10 loose cubes (mixed colors), Partners of 10 Puzzle (5- and 5-stick, Template), numeral card 10 (Lesson 6 Template 2)

1. Place the 10 loose cubes on the floor. Invite two students forward. Tell both students to make a stick of 5 cubes.
2. Display the puzzle template. Invite students to place their sticks on the matching puzzle places.



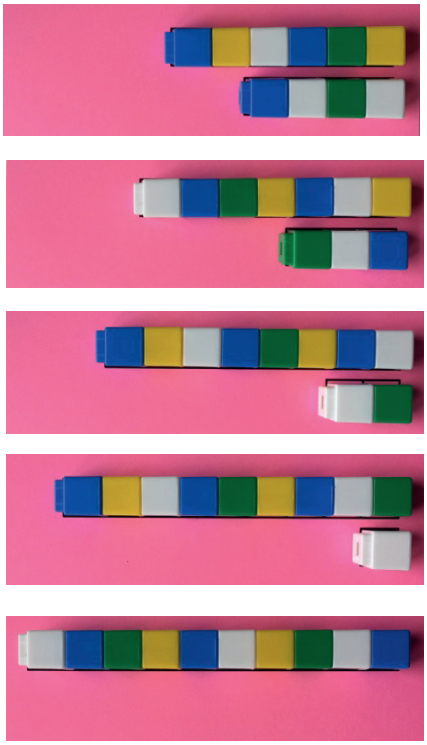
3. Use self-talk while joining the two sticks, "Five is such a familiar number! It helped us count to 6, 7, 8, 9, and 10. I wonder what would happen if I put these two 5-sticks together?" Join the sticks to make 1 longer stick. Count the 10 cubes as a class.
4. Introduce the numeral 10. "This is how we show the number 10. It is very special because we write it using two numbers we know, 1 and 0. Everyone, trace it with your finger in the air." Invite students to share other special things they notice about the numeral.

Note: If students inquire as to why 10 is written using 2 other numerals, say, "In Grade 1 you will learn we write it this way because it is 1 ten and 0 leftovers. (Point to the digits while speaking.) That will be very exciting!"

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Part 2: Practice

Materials: (S) Small resealable bag with 10 cubes of varied colors, Partners of 10 Puzzles (Template, cut apart), numeral card 10 (Lesson 6 Template 2)



Continue to work in the circle so children can easily pass the puzzles.

1. Distribute a bag to each student. Invite children to touch and count the number of cubes in their sticks. Have them use the numeral card to trace 10 with a finger and say "ten" as they do so.
2. Have children break their sticks to match their puzzles. Guide them to describe their work as they are able, for example, "I made smaller sticks." "I broke my 10-stick." "I made 2 parts." "I have some cubes here and some cubes here." "My 4-stick and 6-stick are partners." Support children with the 10 and 0 puzzle to see zero as a partner. MP.2
3. Instruct children to put their sticks back together to form the original stick. Every time they count and make 10 again, have them use the numeral card to trace 10 with a finger.
4. Have students pass their puzzle to right while supplementing early finishers with additional puzzles to keep them engaged.

Student Debrief (3 minutes)

Lesson Objective: Compose 10, and decompose into two parts. Match to the numeral 10.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

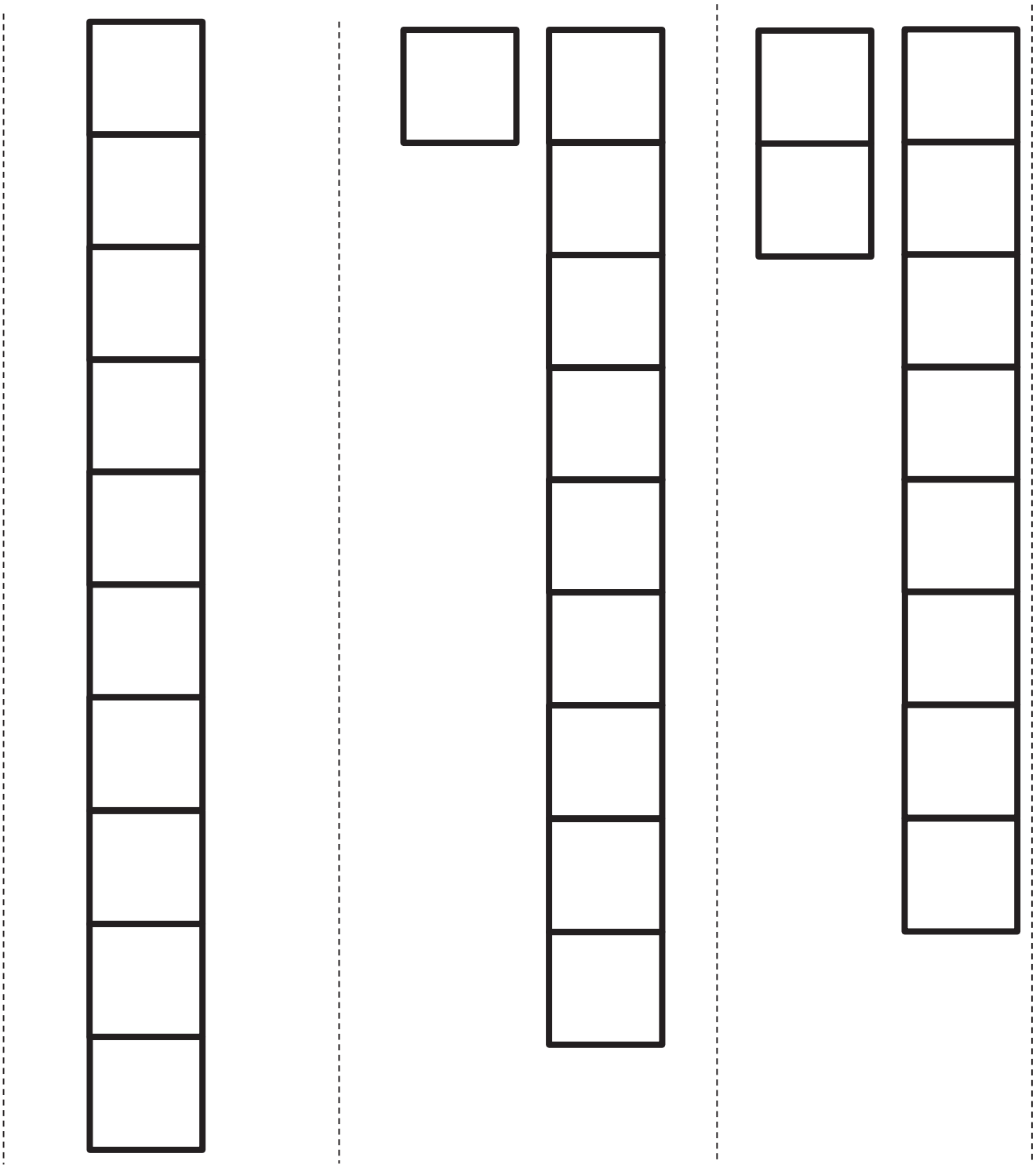
- (Show Partners of 9 Puzzles.) What was the same about all of your puzzles today?
- (Show Partners of 10 Puzzles.) Who can tell me some of the ways that you broke your 10-stick? What partners did you find inside?
- Show me 10 fingers. Wiggle 1 finger. When you wiggle 1 finger, how many fingers are not wiggling? (Repeat with other numbers as time allows.)
- (Show numeral card 10.) What is special about the number 10? What do you notice about its shape?

CENTER CONNECTION:

Add the Partners of 10 Puzzles to the block or puzzle center. Use a coding system so children are able to find the puzzles that go with each number, (e.g., all Partners of 10 Puzzles on pink paper).

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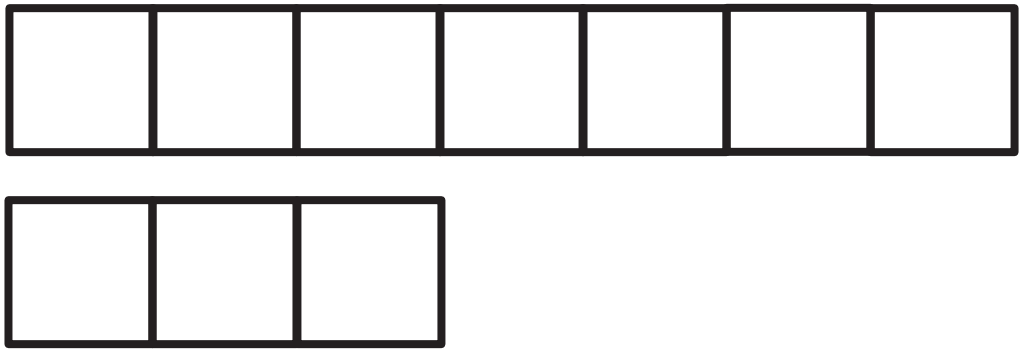
Cut along dashed lines to prepare Partners of 10 Puzzles.

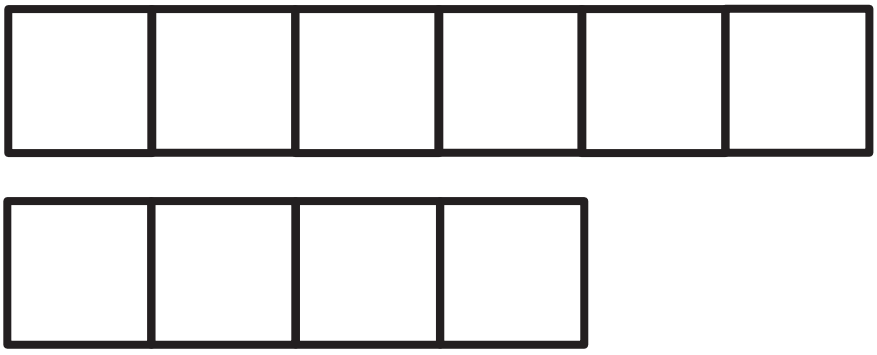


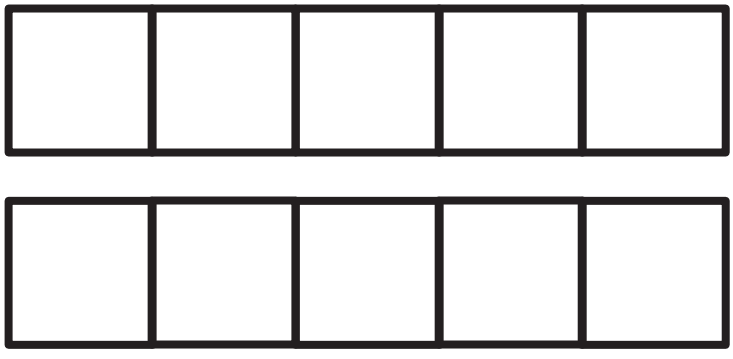
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partners of 10 puzzle

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Cut along dashed lines to prepare Partners of 10 Puzzles.







partners of 10 puzzle

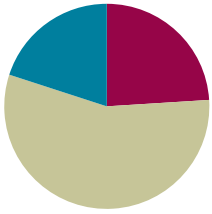
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Lesson 36

Objective: Decompose numbers 6–10.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Concept Development	(14 minutes)
Student Debrief	(5 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Shake the Beans: Part 1 **PK.CC.3.ab** (4 minutes)
- Shake the Beans: Part 2 **PK.CC.3.ab** (2 minutes)

Shake the Beans: Part 1 (4 minutes)

Materials: (S) 6 beans in a small paper cup, a pile of at least 12 more beans for every 3 students

Note: In this fluency activity, students are composing 10 and getting a feeling for the volume the additional beans create in the cup.

T: Pour out your beans, and count them. (Observe strategies.) How many beans do you have?

S: 6.

T: Put them back in your cup. Put your hand over the top, and shake your beans 6 times. Ready?

S: 1, 2, 3, 4, 5, 6.

T: Let's put in 4 more beans and see if our shaker sounds different. (Pause.)

T: Put your hand over the top, and shake your beans 10 times. Ready? Shake!

T: Was the sound different?

T: Pour out your beans, and count them. (Observe strategies.) How many beans do you have now? Who remembers how many we started with? Who remembers how many more we put in the cup?

T: Put your beans back in your cup now.

NOTES ON MULTIPLE MEANS OF EXPRESSION

Exposing students to different percussion instruments gets them thinking about sound in interesting ways. Compare the sound of their paper maraca to a real maraca: "What if we take the 10 beans and put them in a bigger container to be the maraca? What does that sound like? How does the sound change when the container or the beans change?"

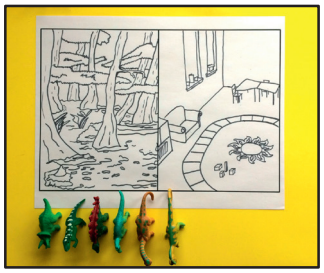
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Shake the Beans: Part 2 (2 minutes)

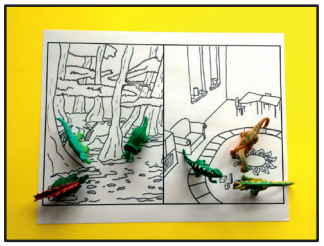
Materials: (S) 10 beans in a small paper cup from the first fluency activity.

Note: In this fluency activity, students decompose ten gradually and, in the process, hear and see the difference between 10 beans, 6 beans, and 2 beans without numerical analysis.

T: Take 4 beans out of your cup. Put them out of sight.
T: Put your hand over the top, and shake your beans 6 times. Ready?
S: 1, 2, 3, 4, 5, 6.
T: Let's take out 4 more beans and put them away. (Pause.) Put your hand over the top of your cup and shake your beans. How many times?
S: 2.
T: Yes, because that is the number we have left! Ready?
S: 1, 2.
T: Was the sound different?



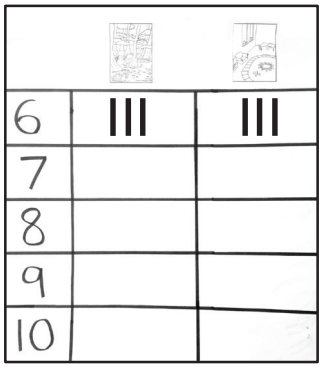
Concept Development (14 minutes)



Part 1: Concept Introduction

Materials: (T) Decomposition mat (Template), tub of 10 dinosaurs (or other counters), chart as shown below

Any counters can be used for this lesson if dinosaurs are not available. Consider using teddy bear counters or have linking cubes represent the dinosaurs.



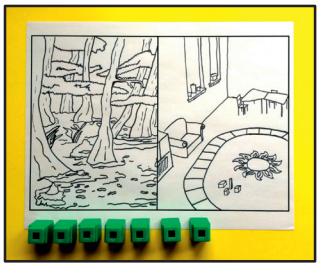
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7		
8		
9		
10		

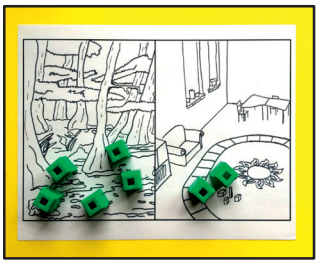
1. Display the Decomposition Template. Say, "This is the dinosaur preschool (point to school picture), and this is the swamp (point). On Monday, 6 dinosaurs came to school. Help me count out 6 dinosaurs." One at a time, place dinosaurs in a line under the template as the children count.
2. Say, "Some of the dinosaurs want to explore the swamp, and some want to play with blocks in the classroom." Move 3 dinosaurs to the swamp and 3 dinosaurs to the classroom. Ask the children *how many* questions about each place.
3. Help the children keep track of the little dinosaurs by tallying the number of dinosaurs in each place. Display the chart paper.
4. Show children how to find the row showing numeral 6 on the chart. Then, show them the swamp picture. Ask how many dinosaurs are in the swamp. Let the children answer and make 3 tally marks right under the picture. Repeat with the classroom picture.
5. Say, "It's time for the dinosaurs to come back together." (Put all dinosaurs in one line). "Do we still have 6 dinosaurs?" Help the children count and see that they still have the same number of dinosaurs.

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Part 2: Practice

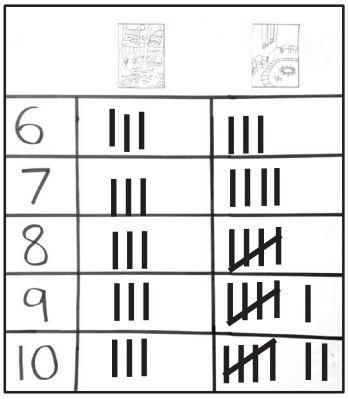
Materials: (S) Decomposition mat (Template), tub of 10 dinosaurs (or other counters)





Have the children move to the prepared table. Use linking cubes to represent dinosaurs if there are not enough dinosaurs for every student to have 10.

1. Say, "It is Tuesday, and there are now 7 dinosaurs at school. Make a line of 7 dinosaurs." Circulate and support as needed.
2. Say, "Some of the dinosaurs want to explore the swamp, and some want to play with blocks in the classroom. Move your dinosaurs where you think they want to go." Provide support as children move the dinosaurs.
3. MP.7 Say, "Bring your dinosaurs back together in a line. Tell your neighbor how many dinosaurs you have in your line."
4. Say, "Now, it is Wednesday, and there are 8 dinosaurs at school. Make a line of 8 dinosaurs." Repeat Steps 2–3.
5. Repeat this pattern with 9 dinosaurs on Thursday and 10 dinosaurs on Friday.



Student Debrief (5 minutes)

Lesson Objective: Decompose numbers 6–10.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

Note: Have students bring their Problem Sets to the Debrief.

- (Display the Decomposition Template from the Concept Development and seven dinosaurs.) Three dinosaurs go to the swamp. Let's move the rest to the classroom. How many dinosaurs are in the classroom?" (Repeat for 8–10, recording the results on the chart each time.)

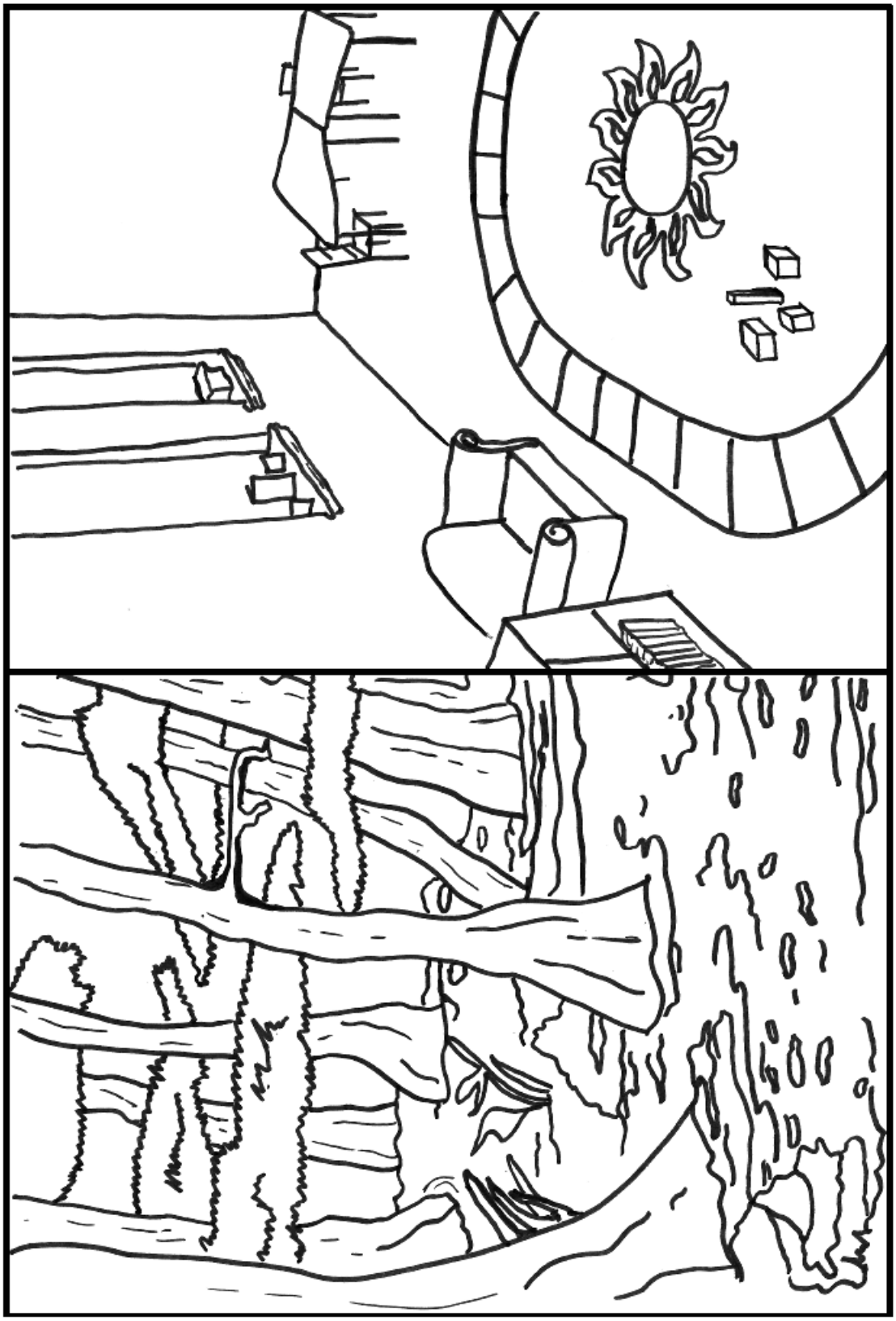
CENTER CONNECTION:

Before dismissing children to centers, help them count the number of children in the group. Dismiss. On chart paper, make a tally of the number of students in each center. At the end of center time, bring the group back together. Note that students were able to break into small groups and then come back together to make the original big group. Compare this to what happened with the dinosaurs.

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- Look at the chart. How many dinosaurs are in the swamp every day? (Point to orient them to look vertically at the chart.) What do you notice about the dinosaurs in the classroom each day?
- What is the same about all of these ways that the dinosaurs broke into 2 groups? What is different?
- Do you think we could come up with another way that the dinosaurs went to the swamp and the classroom? How?

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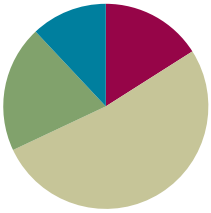
decomposition mat

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Lesson 37

Objective: Arrange and count 10 objects in circular configurations.

Suggested Lesson Structure



Fluency Practice	(4 minutes)
Application Problem	(5 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (4 minutes)

- Ten Teddy Bears **PK.CC.4** (4 minutes)

Ten Teddy Bears (4 minutes)

Materials: (S) 5 large teddy bear counters, 5 small teddy bear counters

Note: If different-sized teddy bear counters are unavailable, use another type of manipulative, (e.g., red and blue counters).

Note: During this fluency activity, circulate and watch students' counting strategies.

T: Put your big teddy bears in a line. (Pause.) Put the small teddy bears in a line right across from the big teddy bears. (Demonstrate.)
T: Count all the teddy bears.
S: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
T: Count how many teddy bears are big.
S: 1, 2, 3, 4, 5.
T: Count how many teddy bears are small.
S: 1, 2, 3, 4, 5.
T: Move your line of big teddy bears to the end of your line of small teddy bears to make one long line of teddy bears.
T: Touch and count to find out how many teddy bears are in your line now.
S: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Show students the numerals from 1 to 10. Ask them which one shows the number 10.

A NOTE ON MULTIPLE MEANS OF REPRESENTATION

Some children may benefit from acting out the 5-group and linear configurations using their own bodies first. This provides a different perspective than working with the bear counters.

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Application Problem (5 minutes)

Materials: (T) 1–5 white board or poster from M1 Lesson 22, 6–9 white board or poster from Lesson 27, 10 puppies (Template 1), magnetic numerals 1–10

Gather children in a circle. Say the following rhyme, gesturing to each object on the chart:

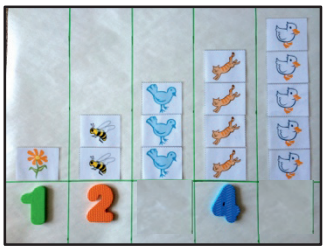
One little flower, 2 little bees,
3 little birds in a tree.
Nice warm sun shines down on me.
I can count! 1, 2, 3.

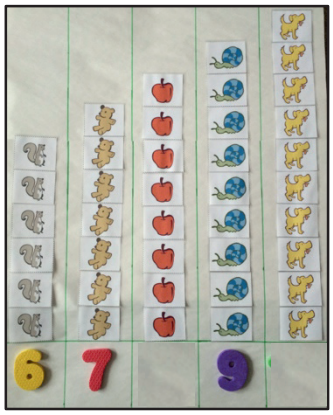
4 little kittens come out to play,
On this warm and sunny day.
Five little ducks take a dive.
Count them: 1, 2, 3, 4, 5.

6 little squirrels, quick as can be,
Climbing up the old oak tree.
In its shade sit 7 chairs,
1, 2, 3, 4, 5, 6, 7 bears.

8 little apples up in the tree,
Some for you, and some for me.
9 little snails in a line,
1, 2, 3, 4, 5, 6, 7, 8, 9.

10 little puppies scampering past,
Running very, very fast,
We count over and over again,
1, 2, 3, 4, 5, 6, 7, 8, 9, 10.





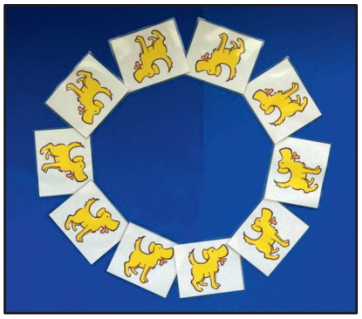
Pass out the magnetic numerals 3, 5, 8, and 10. Ask, "Who has the number to show how many birds (ducks, apples, and puppies) there are?" Have students put the magnetic numerals on the chart to match. Say, "Clap when I touch the number 10." Point to each number in order starting from 1. Students should be completely silent to encourage *internal* counting, clapping only once when the number 10 is touched.

Note: Post these charts in the classroom so children can periodically count the objects. The stair-like configuration helps children internalize the *1 more* pattern in the counting sequence.

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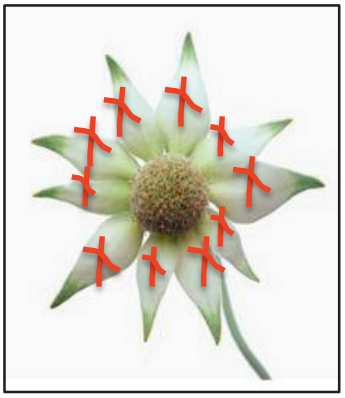
Concept Development (13 minutes)

Part 1: Concept Introduction



Materials: (T) Magnetic numerals 0 and 6–10, 10 puppies (Template 1), flower image (Template 2)

1. Take the puppies off the board, and put them in a circle. Say, "These puppies are chasing one another's tails around and around in a circle. Let's count how many puppies are in the circle." Touch and count each puppy. Instead of stopping at 10, continue around the circle until students notice a problem.
2. Ask children to remember how to count things in a circle. Repeat the count, perhaps drawing a collar on one puppy to mark the start of the count.
3. Ask children, "Point to the number that shows how many puppies are chasing each other." Ask them, "This number? This number?"
4. Display the flower template. Say, "One puppy found a pretty flower. Can you help the puppy count the petals?" Call a student forward to touch and count each petal. Show him how to make a dot or cross on each petal after it has been counted.
5. Say, "Count how many blue petals are on the flower." Guide children to see that there are 0 blue petals, and ask them to find the matching numeral.



Part 2: Practice

Materials: (S) Per pair: Numeral cards 8–10 (Lesson 6 Template 2, cut apart), small resealable bags containing circular configuration cards (Template 3, cut apart), sticker or linking cube (to mark start)

1. Match the children with a partner and tell them, "Let's play school! One of you will be the teacher, and one of you will be the student."
2. Say, "Teachers, pick a bag, and choose a card. Ask your student how many things are in the circle."
3. After the children have done so, say, "Teachers, find the number that matches."
4. The children switch roles, repeating Steps 2 and 3.
5. Circulate among groups, and support as necessary. In particular, watch to see that the children are marking a starting point for the count or marking off each object as they count. If they mark only the first object, make sure the marked object is the first object counted and does not get recounted at the end of the count.

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Student Debrief (3 minutes)

Lesson Objective: Arrange and count 10 objects in circular configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief.

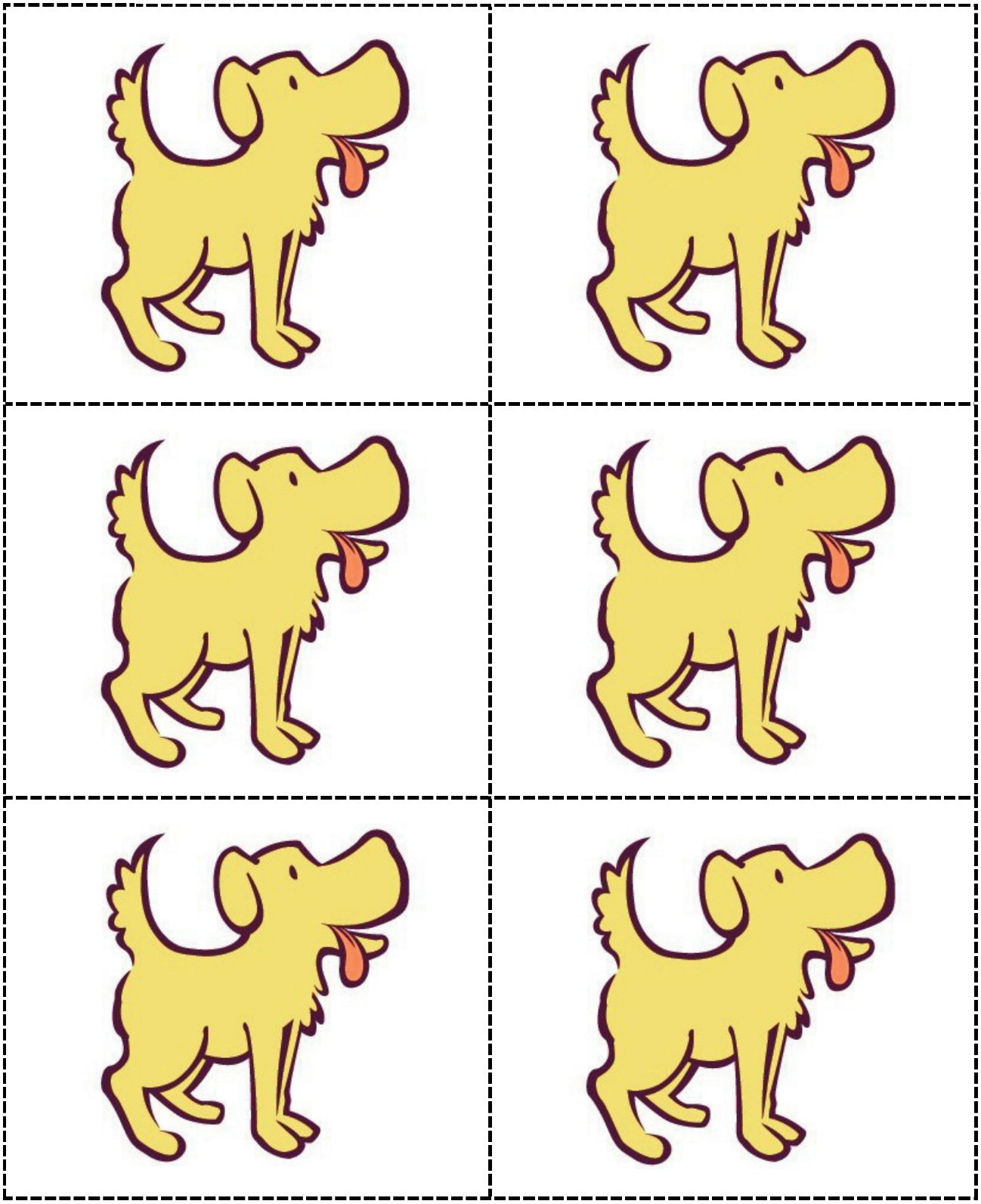
Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- When counting the puppies, what did you do? How did that help you to know the place to stop counting?
- (Draw or display 5 objects in a circle. Display numerals 5–10 on the carpet.) Which number tells how many objects I have? (Pause, as students need time to count.) What if I put 1 more in the circle? (Continue adding 1 more until there are 10 objects.)
- (Show 1–5 and 6–10 charts.) Remember when we made stairs using our linking cubes? What is the same about these pictures and our linking cube stairs?
- (Show the single flower from the circular configuration cards.) Tell students that some of them matched this card to the number 1, and some matched it to 10. Ask them which is right. Guide them to see both perspectives (one flower and ten petals).

CENTER CONNECTION:

In the art center, provide children with a circle template and 10 ball or bone cut-outs. Have children count and place the balls/bones around the circle. If children are ready, glue the circle to a larger piece of paper, and invite them to draw a puppy for each ball/bone.

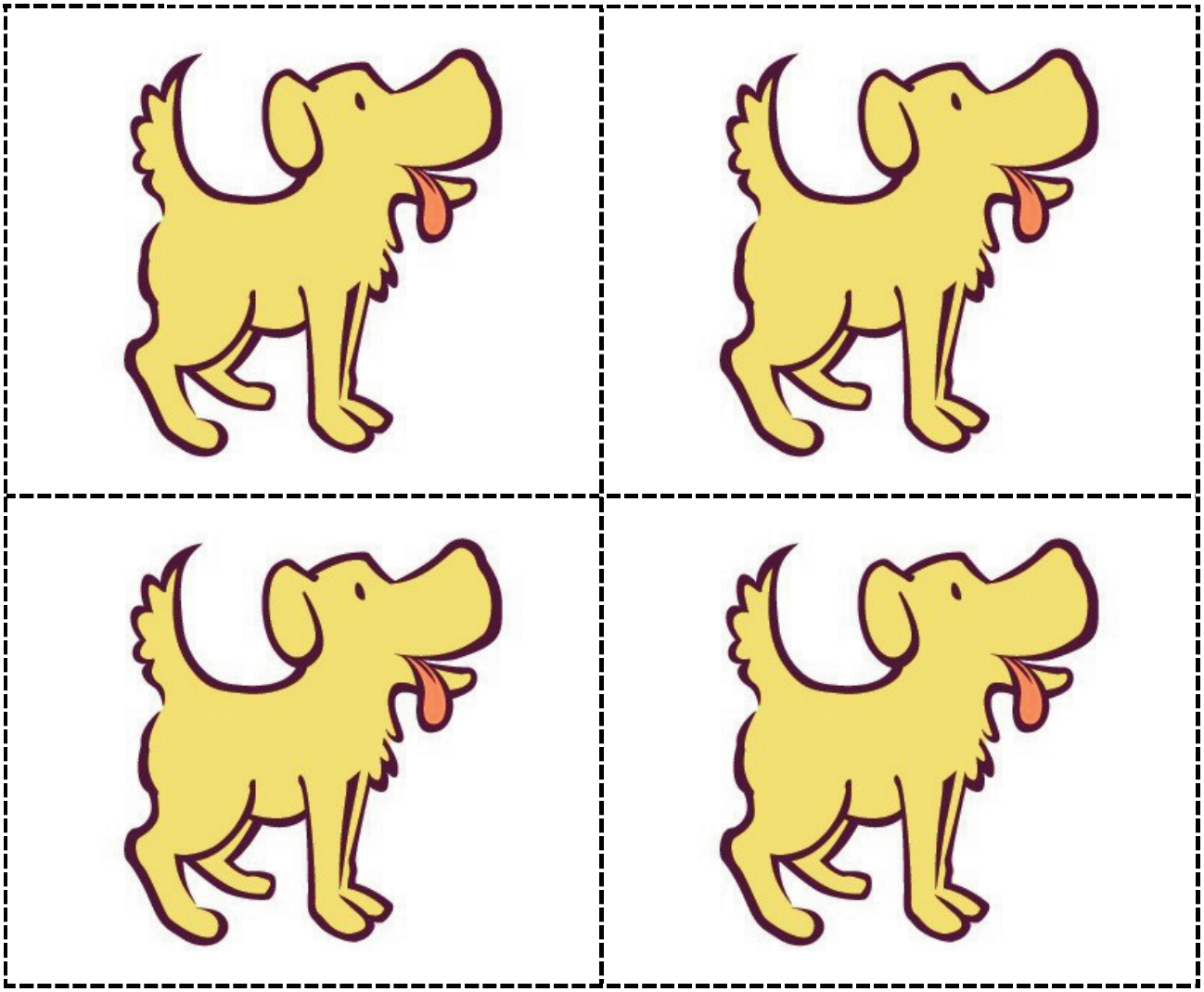
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10 puppies

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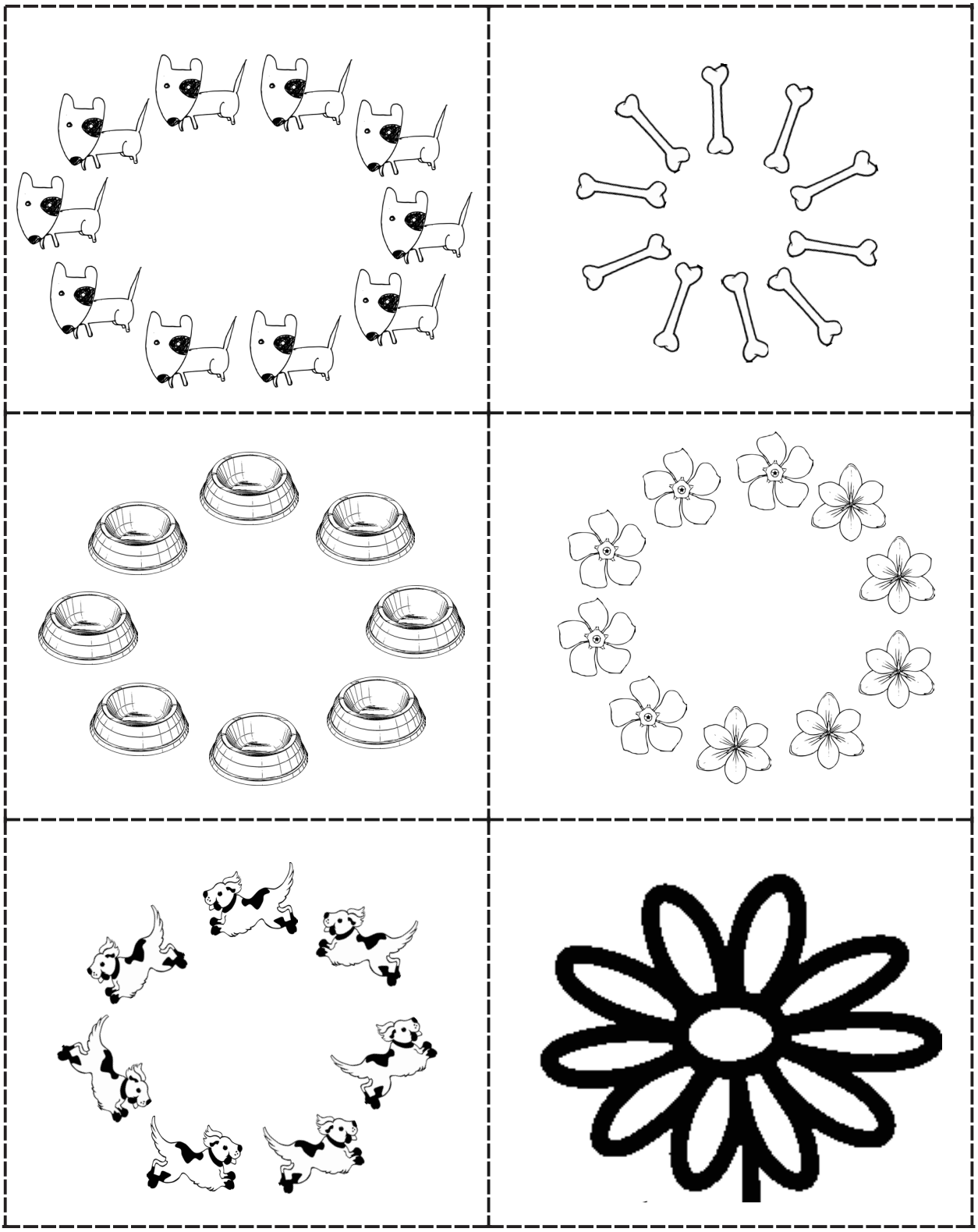
10 puppies

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flower image

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circular configuration cards

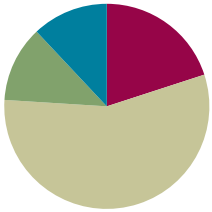
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Lesson 38

Objective: Count up to 10 objects in varied configurations.

Suggested Lesson Structure

Fluency Practice	(5 minutes)
Application Problem	(3 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (5 minutes)

- The Fingers on One Hand **PK.CC.3a** (2 minutes)
- Touch and Count to 10 **PK.CC.3a** (3 minutes)

The Fingers on One Hand (2 minutes)

Note: This is part of a sequence of four fluency activities in Lessons 38 through 41 that move from simple to complex. This fluency activity asks children to move between showing 4 and 5 fingers to revisit *1 more*. Put a stamp on their right hands in advance to help them find the left easily.

T: Let's only use one hand today! Put your right hand, the one with the stamp, behind your back. Show me all the fingers on your other hand.
S: (Show.)
T: Hide your thumb. (Pause.) Show your thumb. Hide it. Show it.
T: Show me 5 fingers.
S: (Show.)
T: Yes! It's the same. I just used different words.
T: Hide your thumb. (Pause.) When I give the signal, tell me how many fingers are showing. (Signal after observing which students are counting and how they are counting.)
S: 4.
T: Show me 1 more finger. How many fingers are showing now? (Pause.)
S: 5.

Playfully repeat this simple exercise a few times, moving back and forth between 4 fingers and 5 via 1 more and possibly *1 less* as they are ready.

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Touch and Count to 10 (3 minutes)

Materials: (S) Tower of 10 (5 of one color and 5 of another color)

Note: This same fluency activity has been repeated with all numbers 6–10. Familiar with the logistics, students can focus more on the counting and the fact that the color change takes place after the fifth cube.

T: Touch and count the cubes in your stick. Use a whisper voice for the bottom color and a big voice for the top color.
S: (Use a whisper voice.) 1, 2, 3, 4, 5. (Use a big voice.) 6, 7, 8, 9, 10.
T: Touch and count again and use a big voice for the bottom color and whisper voice for the top color.
S: (Use a big voice.) 1, 2, 3, 4, 5. (Use a whisper voice.) 6, 7, 8, 9, 10.
T: This time, use a growling voice for the bottom color and a high voice for the top color.
S: (Use a growling voice.) 1, 2, 3, 4, 5. (Use a high voice.) 6, 7, 8, 9, 10.

Show students the numerals 1–10, and ask them to say, "That's 10." Then, the teacher traces the shape in the air with one finger while pointing to the number 10.

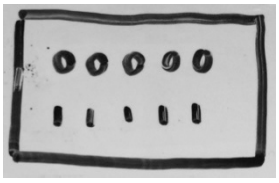
Application Problem (3 minutes)

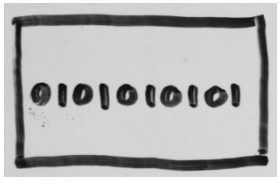
Materials: (S) 10 sunflower seeds

Tell students to notice as much as they can about their seeds. Which ones are big, and which ones are small? Which ones have a different shape? Which ones are rounder? Longer? After spending time observing the seeds, have them count to see how many there are.

Note: This fluency gives students an opportunity to compare informally in anticipation of Module 4's work with comparison.

Concept Development (14 minutes)



Part 1: Concept Introduction

Materials: (T) Long rectangle of green construction paper, 10 seeds, numeral card 10 (Lesson 6 Template 2), white board or chart paper

Note: Choose seeds that are large enough for the whole group to see, (e.g., sunflower, nasturtium, lima bean). For this lesson, having two different types of seeds is helpful.

1. Gather students in a circle around the green construction paper. Say, "Maria and Ezra's class wants to plant flowers outside their classroom window. They each bring 5 seeds." Enlist 2 students to count out 5 seeds each and bring them to the teacher.

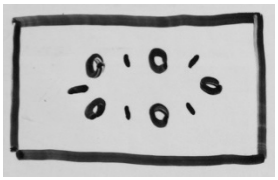
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2. Say, “Maria suggests that they make a line using her seeds and another line using Ezra’s seeds.” Place the seeds in 2 lines (5-group configuration), and have students count the total number of seeds.
3. Say, “The class works together to think about other ideas. They decide to draw each of their ideas to remember it.” Draw the 5-group idea, and have children count the seeds in the drawing from left to right and top to bottom to make sure there are 10.

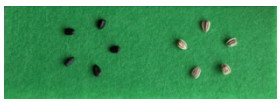


4. Say, “Joshua thinks they should make a pattern in 1 long line. He shows his idea, saying, ‘Ezra’s seed (place a seed), Maria’s seed (place a seed), Ezra’s seed (place a seed)…’ as he places each seed.” Have children count the seeds and draw this idea.

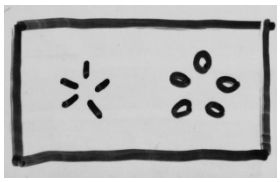
MP.4



5. Say, “Ezra shares that they planted the seeds in a circle in his garden.” Try to make a circle with the seeds, and help children see that there is only room for an oval, or the plants will be too crowded. Repeat the sequence of touching and counting, and then draw.



6. Say, “Kelly says that they could break the seeds into 2 groups and make 2 small circles.” Have 2 students break the seeds into 2 groups and make 2 small circles. Repeat the sequence of touching and counting, and then draw.



Part 2: Practice

Materials: (T) Garden idea drawings (S) Long rectangle of green construction paper, bag with 10 seeds

1. Pair students and send them to tables with construction paper and a bag.
2. Invite students to choose their favorite garden idea and arrange their seeds to match. Encourage them to describe their seed layout to their partner.
3. Instruct partners to take turns counting and asking *how many* questions about each other’s seeds.
4. Have them try out a new idea for arranging the seeds. They can use an idea from the drawing or one of their own. Repeat Steps 2 and 3.

A NOTE ON MULTIPLE MEANS OF REPRESENTATION:

While circulating and listening to partners share, encourage students to connect the math they are learning to real world situations. For example, ask students if they have seen arrangements similar to their seed pattern on the playground, in the classroom, or in the cafeteria. Making connections helps students who may be struggling with comprehension.

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Student Debrief (3 minutes)

Lesson Objective: Count up to 10 objects in varied configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Which idea did you like best? Which one made it easiest to count the seeds?
- (Show the idea drawings.) What is the same about the seeds in all of these drawings?
- (Display numeral cards 8–10.) Which number tells how many seeds you counted in each drawing?

CENTER CONNECTION:

In the art center, have children choose their favorite garden layout and arrange their seeds. Replace each seed with a drop of glue. Have children create flowers by crinkling their tissue paper, and place one piece of paper on each drop of glue. Have them count the seeds in the original drawing and the flowers in their final artwork.

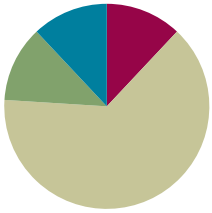
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Lesson 39

Objective: Count up to 10 objects in varied configurations.

Suggested Lesson Structure

Fluency Practice	(3 minutes)
Application Problem	(3 minutes)
Concept Development	(16 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (3 minutes)

- The Fingers on One Hand **PK.CC.3.abc** (3 minutes)

The Fingers on One Hand (3 minutes)

Note: This fluency asks students to show fingers on one hand, encouraging them to informally notice number relationships within 5 of 1 more and 2 more.

T: Let's only use one hand again today! Put your right hand behind your back. Show me 5 fingers on your left hand.

T: Hide your thumb. (Pause.) When I give the signal, tell me how many fingers are showing.

S: 4.

T: Show me 1 more finger. How many fingers are showing now? (Pause.)

S: 5.

T: Hide your thumb and your pointer finger. (Pause and demonstrate.) How many fingers are showing now?

S: 3.

T: Show me 2 more fingers. (Demonstrate.) How many fingers are showing now?

S: 5.

NOTES ON MULTIPLE MEANS OF EXPRESSION:

Have students make a print of their left hand during art, and use it during fluency. Have them cover one finger, then 2 fingers, and then 3 fingers with a hiding card (a piece of paper) to see how many fingers are still showing. Then, have them repeat *The Fingers on One Hand*, placing their hand directly on top of their handprint to see if they improve in fluently working within five. Keep it playful, brief, and interesting.

Move between 3 and 5 playfully. Once they are fluent, move between 4 and 5, 3 and 5, and 3 and 4.

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Application Problem (3 minutes)

Materials: (S) Small resealable bag containing 10 counters (the same as those to use during Bingo in the Concept Development)

Say, "Ms. Lee runs a store. She needs to organize her apples so they are easy to count every morning. Use your counters to show one way Ms. Lee could organize her apples."

After the apples are organized, ask how many apples Ms. Lee has. Give students a chance to observe other ways to organize the apples. Invite them to share why they think certain organizations would work best.

Note: This activity gives children a chance to apply what they know about organizing objects for counting. Note students who are using lines, 5-groups, or arrays to organize their count. If students are attempting to count using a scattered configuration, support them to find a more efficient configuration during the discussion.

Concept Development (16 minutes)

Part 1: Concept Introduction

Materials: (T) Large Bingo board on chart paper (see Bingo Template 1), chips, numeral cards 0–10 (Lesson 6 Template 2) (S) Per student: Bingo board (Templates 1–10), small resealable bag with chips

Bingo boards 1-10 provide a good entry point into the game because they contain both numerals and sets of objects. Children who are able to count larger sets quickly may be ready for Bingo boards 11-15, which have no numerals. Bingo boards 16-20 have a heavier focus on numeral recognition.

1. Distribute a Bingo board and bag with chips to each student. Place a large Bingo board in the center of the carpet. "Let's play Bingo! What do you see on your Bingo board?"
2. Guide students to see different representations of the numbers 0–10. Take a moment to point out the empty space, and help children realize that nothing represents zero. Explain that they should say *Bingo* when they have 3 in a row. Model all possible ways students could have 3 in row.
3. Choose a numeral card. Say, "I chose 7, so you put your chip on a space that shows 7." (Alternatively, show the numeral, and have students say the name.) Invite a volunteer to place a chip on the large Bingo board. Have students do the same on their boards.
4. Continue to select cards and demonstrate on the large board. Monitor student boards to help them say, "Bingo!"



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Part 2: Practice

Materials: (T) Numeral cards 0–10 (Lesson 6 Template 2)
(S) Per student: Bingo boards (Templates 1–10), small resealable bag with chips

1. Have students pass their board to the person on the right. Remove the teacher model, and play again.
2. Watch as children play, making sure that they are counting and correctly placing chips on their boards.
3. Each time *Bingo* is called, point out the different ways a line of 3 chips can look (vertical, horizontal, or diagonal).



A NOTE ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

Have children preview their Bingo boards by counting all of the sets or naming the numerals before the game. Provide an ample amount of wait time for students to find a correct space to place their chip.

Student Debrief (3 minutes)

Lesson Objective: Count up to 10 objects in varied configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

Note: Have children bring their Bingo boards to the Debrief.

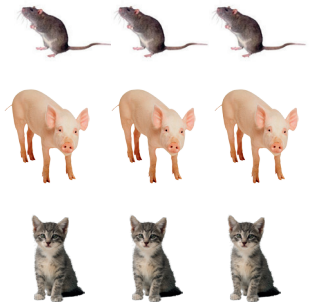
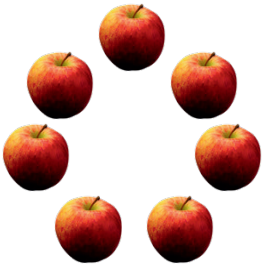
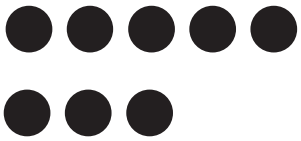
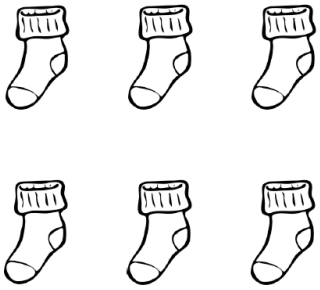
- (Choose a numeral card.) Which box on your Bingo board matches this number? Is it the same as your friend's? Are there the same number of (e.g., apples, chickens) in that box?
- Which numbers on your Bingo board were the easiest to find? Why were they easiest to find?
- Which numbers on your Bingo board were the hardest to find? Why were they hardest to find?

CENTER CONNECTION:

Give children an opportunity to continue playing the game during centers. One student can take on the role of the teacher, picking a card and calling out the number (this provides practice identifying numerals). While students play, monitor the class, and help the child who is calling the numbers move on at an appropriate rate. Children who are ready can even create their own game boards.

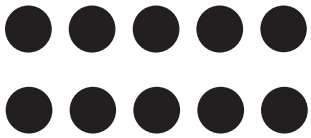
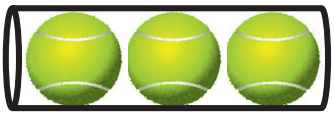
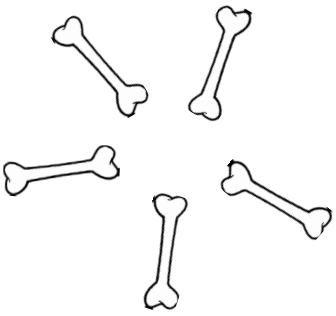
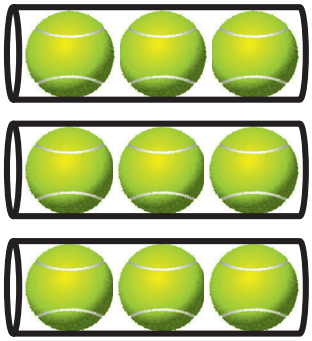
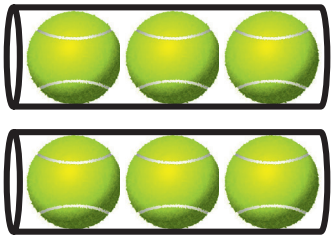
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B I N G O

		10
5	0	
		

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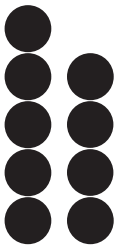
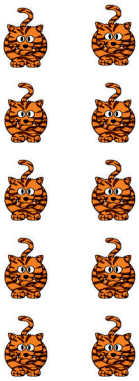
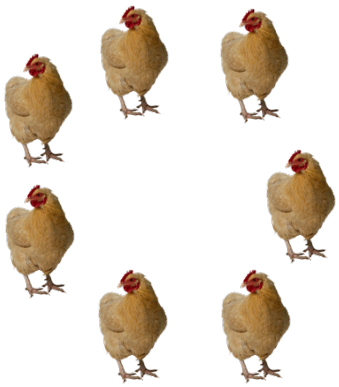
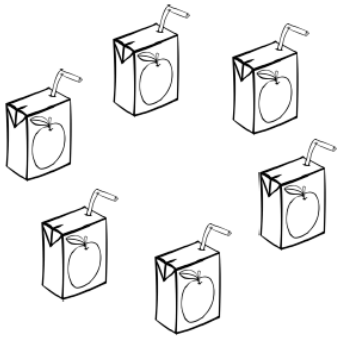
BINGO

8		
7		4
		

Bingo board 2

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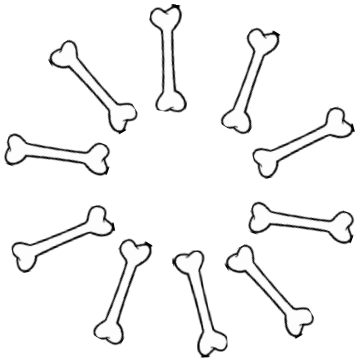
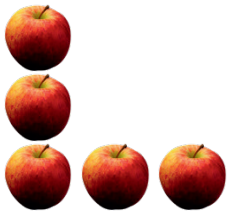
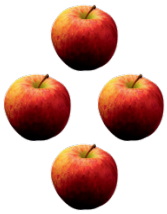
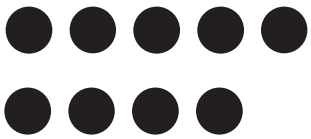
BINGO

	8	
		
	1	

Bingo board 3

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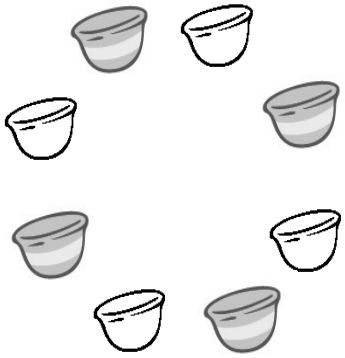
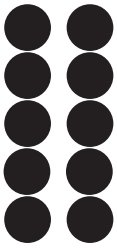
BINGO

	0	6
		
	2	

Bingo board 4

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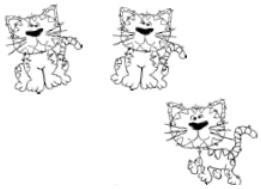
BINGO

		
	3	
		7

Bingo board 5

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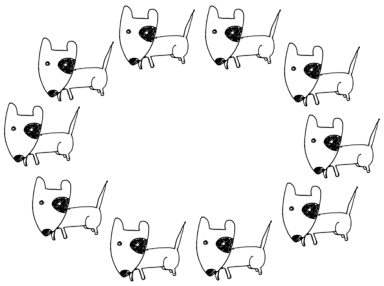
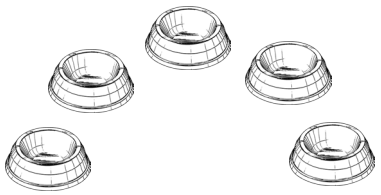
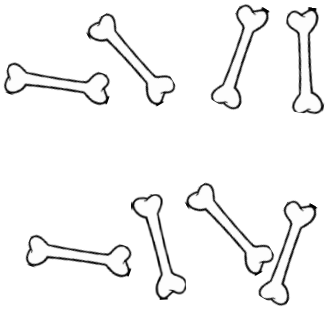
B I N G O

●●●●● ●●●		9
10		
		●●●●● ●●

Bingo board 6

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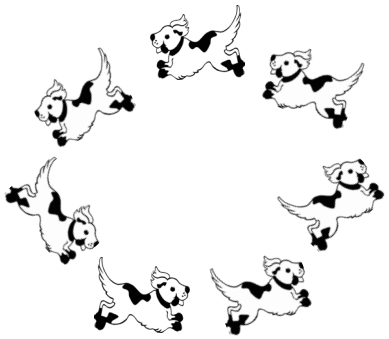
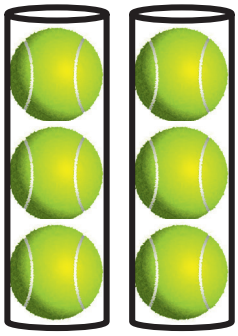
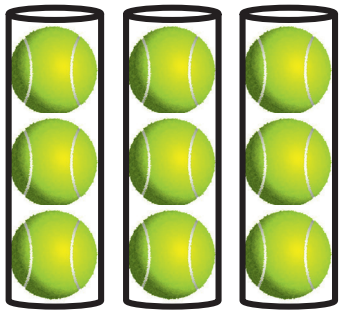
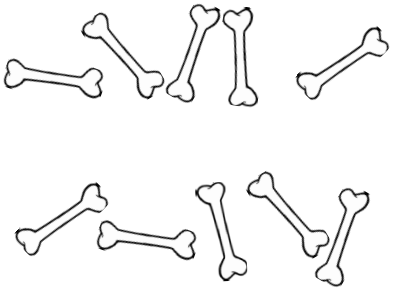
B I N G O

		
1	6	
	:	7

Bingo board 7

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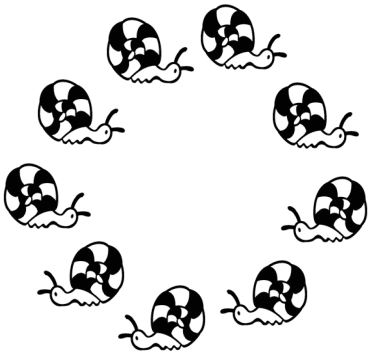
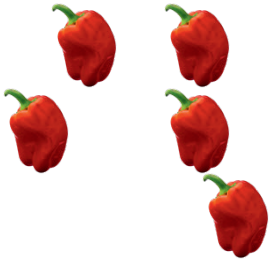
BINGO

	4	
		
		2

Bingo board 8

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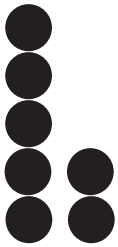
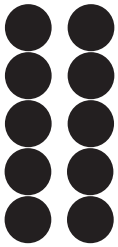
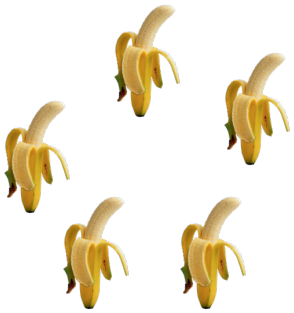
B I N G O

	1	
		10
8		

Bingo board 9

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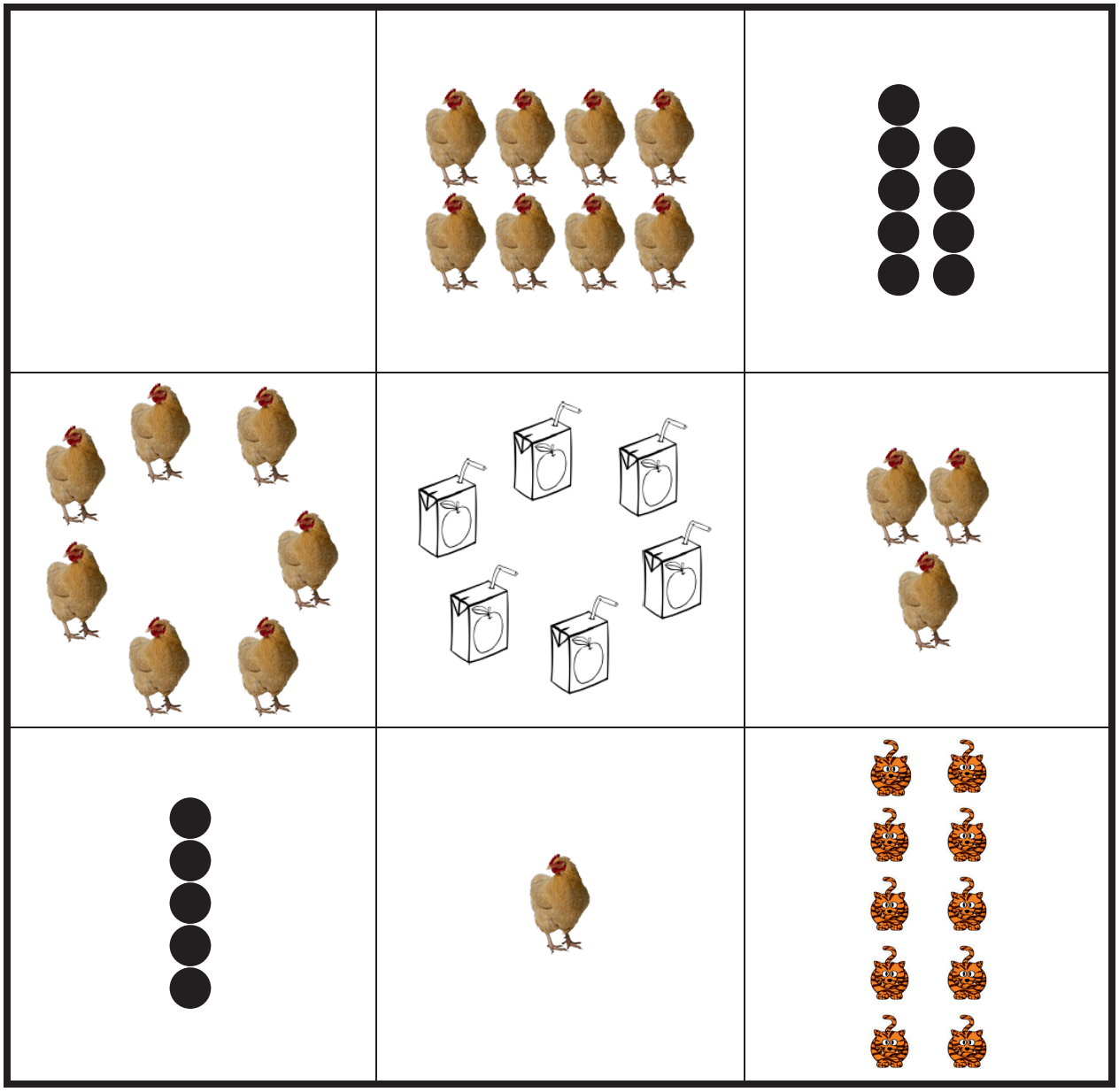
BINGO

	0	
9		3
		

Bingo board 10

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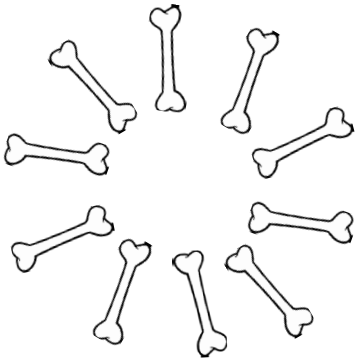
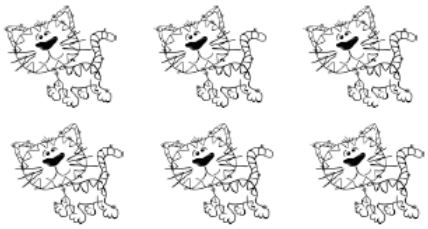
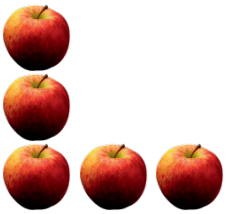
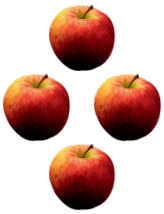
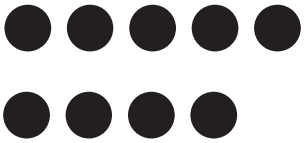
BINGO



Bingo board 11

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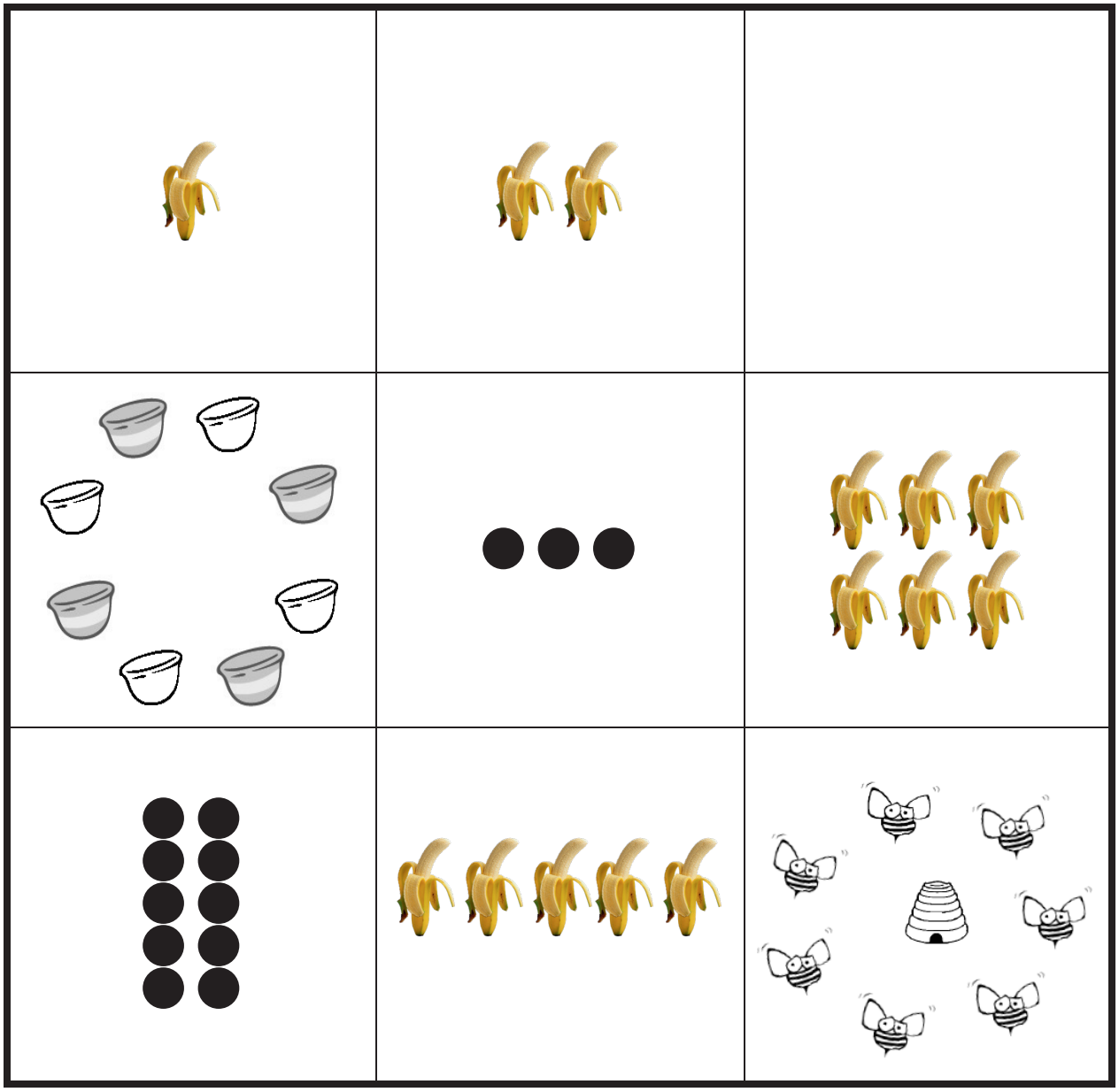
BINGO

Bingo board 12

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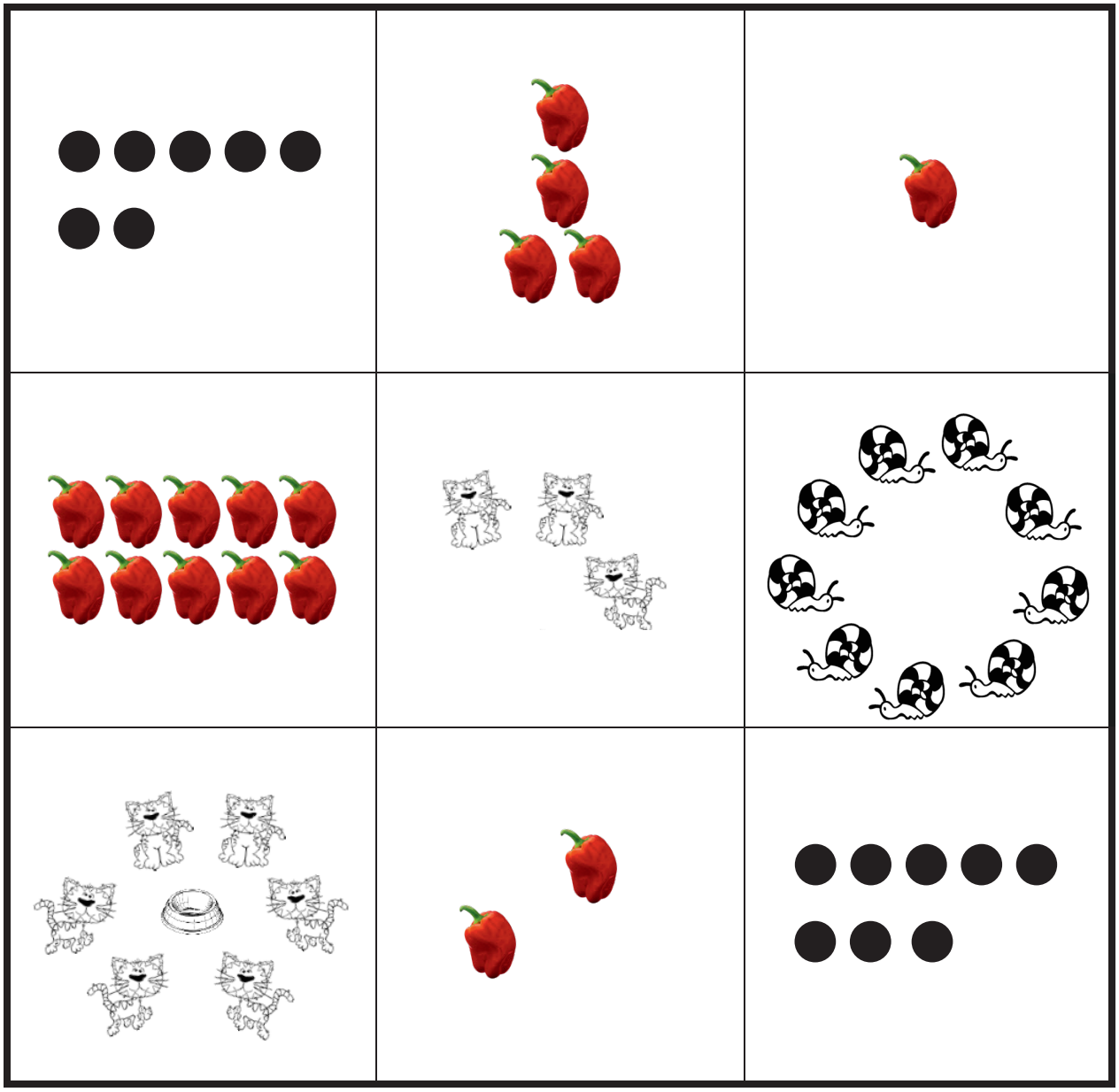
BINGO



Bingo board 13

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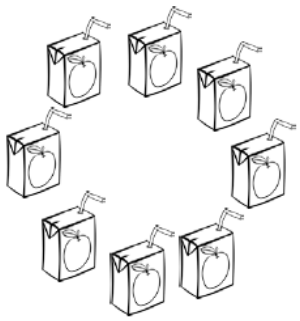
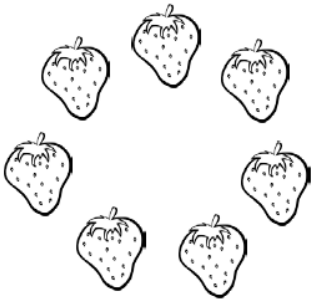
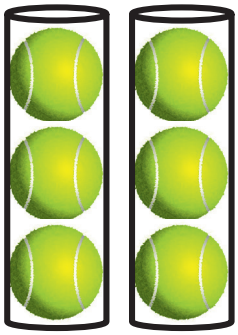
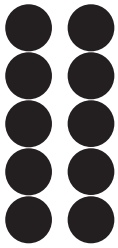
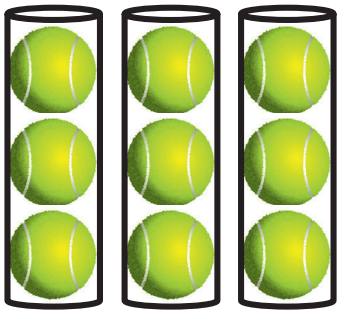
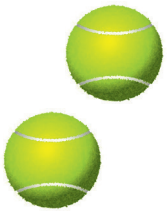
B I N G O



Bingo board 14

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B I N G O

Bingo board 15

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B I N G O

4	1	2
7	9	10
8	3	6

Bingo board 16

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B I N G O

5	9	3
0	8	7
4	6	10

Bingo board 17

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B I N G O

2	7	6
8	9	3
5	10	0

Bingo board 18

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B I N G O

10	9	7
8	1	4
0	5	6

Bingo board 19

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B I N G O

7	0	9
2	10	1
5	6	8

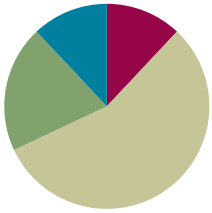
Bingo board 20

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Lesson 40

Objective: Tally 10 objects.

Suggested Lesson Structure



Fluency Practice	(3 minutes)
Application Problem	(5 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (3 minutes)

- The Fingers on One Hand, and *1 More* **PK.CC.3abc** (3 minutes)

The Fingers on One Hand, and *1 More* (3 minutes)

Note: Now that two lessons have been spent playing with 5 fingers, students show *1 more* using the thumb on the right hand.

T: Show me all the fingers on your left hand. (Pause.) Show me your thumb on your other hand. (Pause.) Put your hands next to each other.

T: Hide the thumb that is alone. (Meaning the thumb of the right hand.) Show your thumb. Hide your thumb. How many fingers are showing? Wait for the signal to tell me. (Pause and observe.)

S: 5.

T: Show your thumb. (Pause.) How many fingers are showing now? Wait for the signal to tell me. (Pause and observe.)

S: 6.

Move between 5 and 6 playfully, gradually inserting the language of *1 more* and *1 less* as they are ready.

NOTES ON MULTIPLE MEANS OF EXPRESSION:

Have students make a print of their right hand during art, and place it next to the print they made of their left hand. They can, again, cover certain fingers and have a wonderful model of 10 for use during a variety of activities, such as placing a bean on each fingernail or some fingernails. These "templates" can be posted around the classroom in a plastic storage bag for easy access.

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Application Problem (5 minutes)

Materials: (T) numeral cards 0 and 5–10 (1 to match each cup, Lesson 6 Template 2) (S) Cup containing 0 or 5–10 bee stickers

Distribute a cup to each child, and spread the numeral cards in the center of the circle.



T: It's time to open up the Pollen Café again! Let's get the bees ready. Find the number that tells how many bees are in your cup.

Circulate and make sure that students are lining up their bees and counting with one-to-one correspondence. Once children have found the correct numeral, have them place it in the cup with the bees.

Note: This Application Problem sets the context for the Concept Development. Create cups with 5–7 bees for students who are just starting to master bigger numbers, but have 8–10 bees in most cups. Consider having an extra cup ready for students who start with 0 bees to keep them engaged in the counting.

Concept Development (14 minutes)

Part 1: Concept Introduction

Materials: (T) Cup containing 10 bee stickers, number path (Lesson 10 Template), paper and crayon (or white board), 10 flowers (S) Paper and crayon (or white board)



1. Select a child to bring the bee customers to the Pollen Café. Give her the cup of bees. Display the number path. Say, "Put the customers in these special bee seats."
2. Ask, "How many bees did Rachna seat in the Pollen Café?" Give students a moment to think before prompting the count. Touch and count along with the class. Ask, "Is there a way we could have known there were 10 bees without counting?" Help children see the relationship between the count and the numerals.
3. Say, "I'll be the waiter. I'll make a tally for each order to show how many flowers I need to get." Direct 10 students to place an order for the bees by saying one at a time, "Please, may I have 1 flower?"
4. Tally the flowers as each one orders. Have students count the number of tallies in each group (5), and then count all the tallies (10).
5. Next, make an order for each bee as students tally. Signal the fifth and tenth orders so that children remember to make a diagonal tally.
6. Say, "Now, the waiter is ready to take the order to the chef!" Take out the *order* of 10 flowers. Have children count along, giving each bee a flower as they count.

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Part 2: Practice

Materials: (S) Cup containing 0 or 5–10 bee stickers, number path (Lesson 10 Template), paper and crayon (or white board)

Assign each student to be either the person to seat the bees or a waiter. Distribute the appropriate materials.

MP.7

1. Have one partner seat the bee customers on the number path, and then order by saying, "Please, may I have 1 flower?" for each bee. Have the waiters tally the flower orders, 1 per bee.
2. Support waiters as they tally the order. Encourage the other partner to count the tally to make sure it matches the order.
3. Have children switch roles, and repeat with a new cup of bees, ensuring that everyone has a chance to practice making tally marks.



A NOTE ON MULTIPLE MEANS OF ENGAGEMENT:

Differentiate questioning while circulating. Students who are ready for a challenging extension could be asked, "How many more bees could sit at your café?" "How many tally marks would you make if one more bee was seated?"

Student Debrief (3 minutes)

Lesson Objective: Tally 10 objects.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- (Show number path.) What do you notice about the number of white spaces and gray spaces on the number path?
- (Show 10 tallies and a number tower of 10 with color change at 5.) Can you break this tower to match the tallies? Put it back together. How many cubes are in the tower?
- (Show a few numerals including 0 and 10.) What did you do when you had zero bees? Which number matches 0? How many tally marks do you make to show 0?

CENTER CONNECTION:

Continue to run the Pollen Café in the dramatic play center. Make sure students take turns seating customers and being waiters so everyone has a chance to practice tallying. Prepare a few bags with flowers (5–10 to match the bees), and include the matching numeral. Waiters can deliver the flowers to the customers.

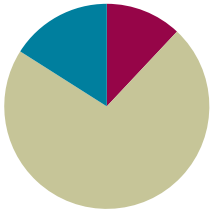
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Lesson 41

Objective: Look at a numeral and count out a group of up to 10 objects.

Suggested Lesson Structure

Fluency Practice	(3 minutes)
Concept Development	(18 minutes)
Student Debrief	(4 minutes)
Total Time	**(25 minutes)**



Fluency Practice (3 minutes)

- The Fingers on One Hand, and *Some More* **PK.CC.3abc** (3 minutes)

The Fingers on One Hand, and *Some More* (3 minutes)

Note: Now that 3 lessons have been spent working with fingers in relation to 5, students show *some more* and find the total.

T: Show me all the fingers on your left hand. (Pause.) Show me your thumb on your other hand. (Pause.) Put them next to each other.

T: Hide the thumb that is alone. (Meaning the thumb of the right hand.) Show some fingers on your right hand. Whatever you want. (Pause and observe.) When I signal, tell me how many fingers you put on your right hand.

S: 5. → 1. → 3. → 4.

T: Great. I want the following friends to stop showing their fingers. (Choose every other student.)

T: Count the number of fingers your partner has showing.

Have the students switch roles as time allows. This can clearly be modified to meet the needs of an individual class as is deemed appropriate.

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Concept Development (18 minutes)





Part 1: Concept Introduction

Materials: (T/S) Cup of 12 flowers, small resealable bag containing the numeral card 10 (Lesson 6 Template 2)

1. Tell students that today the chefs at the Pollen Café must prepare bags of flowers for their customers. They have to count out the right number of flowers for each bag.
2. Invite children to take the numeral cards out of their bags. Ask all students to name the number and trace it with a finger. Ask, "How many flowers do we need for this bag?" Guide children to respond, "10 flowers."
3. Dump the flowers from the cup. Count out the correct number of flowers, using self-talk to describe the thinking, "I'll make a line of 10 flowers for this bag. I'll count and stop when I get to 10. 1 flower, 2 flowers, …, 10 flowers (place tenth flower in line). Stop." MP.7
4. Ask students to count and make sure the flowers match the numeral card. Put the flowers in the bag.
5. Invite children to count out their own line of 10 flowers. Encourage children to say, "Stop!" when they hear the target number. If children are not able to count and keep the target number in their mind, let them use the number path.

Part 2: Practice

Materials: (S) Teachers: cups containing 0–10 bee stickers; Waiters: number path (Lesson 10 Template), paper and crayon or white board and dry erase crayon; Chefs: 12 flowers, numeral cards 0–10 (Lesson 6 Template 2)

Group students and assign roles of teacher, waiter, and chef. Place the cups of bees in a central spot so students can get more *customers* as needed.

1. Walk groups of 3 students through the following steps to play Pollen Café.
   - **Step 1:** *Teacher* takes a cup of bees and places them in their seats on the number path.
   - **Step 2:** *Waiter* makes tally marks to show the number of flower orders and takes the order to the chef.
   - **Step 3:** *Chef* finds the numeral that matches the tally and fills the flower order.
   - **Step 4:** *Waiter* checks to see that the chef counted the right number of flowers and takes the flowers to the seated bees.

A NOTE ON MULTIPLE MEANS OF REPRESENTATION:

Provide a visual model of the steps for playing *Pollen Café* for students who may have difficulty following multi-step directions. The visual model could be drawings or photos of students completing each step.

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2. Have partners switch roles and materials after each turn.
3. Circulate and support children as they tally bees and count out flowers. Help teachers select cups of bees that provide a challenge (i.e., if a child continues to pick cups with 0–3 bees, suggest a cup with a larger number of bees).

Student Debrief (4 minutes)

Lesson Objective: Look at a numeral and count out a group of up to 10 objects.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief.

Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Chefs, how did you know when to stop putting more flowers in the order?
- (Show an itemized check from a restaurant or, if available, the line ticket used in a restaurant kitchen.) Look at this order from a real restaurant. How did the chef know how many of each item to buy?
- Look at the ticket. How can computers help waitresses and chefs get the right orders for customers?
- (Show 10 cubes.) Can you count out 10 cubes from this pile? (Show a big bucket of cubes.) Can you count out 10 cubes from this bucket? What is different about counting 10 from this bucket?

CENTER CONNECTION:

Continue to set up the dramatic play center as Pollen Café. As children play today, have the chefs create a group of flowers based on the tallies brought by the waiter instead of relying on pre-prepared bags. If students are ready for an additional challenge, allow bees to order more than 1 flower.

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Lesson 42

Culminating Task—represent numbers 6–10 using objects, images, and numerals in a number book.

Suggested Lesson Structure

- Culminating Task
- Student Debrief



(Times are flexible. See note in Lesson.)

Total Time

Culminating Task (Duration to be determined.)

Part 1: Concept Introduction

Materials: (T) 3 trays, easel (if possible for demonstration), piece of chart paper, sample number book, manipulatives (e.g., straws, puff balls), pre-cut magazine pictures and shapes (or Template), 1" strips of construction paper (to create 5-groups), various art supplies (e.g., scissors, glue or glue sticks, dot painters, crayons, stickers)

Note: Due to the possible duration of this project, consider allowing children to continue working during the first days of assessment, saving the last day for students to share with families or other members of the school community.

Gather materials on the carpet. On the first tray, place various manipulatives. On the second tray, place pre-cut magazine pictures, shapes, or the Template, and empty 5-group strips. On the third tray, place various art supplies, as noted in the materials. Distribute each child's number book from Module 1.

1. Tell students, "It is so nice to see your number books for 1, 2, 3, 4, and 5. Look at your work from the beginning of the year."
2. Ask, "What numbers have we learned about since we made these books?" As children share, write the numbers 0, 6, 7, 8, 9, and 10 on the board. Explain that they are adding a page to the book for each new number they know.
3. Show students a sample book, and briefly explain materials. Turn to the 6 page, displaying it on the easel. Describe what can be seen, using self-talk. For example, "Look, I see the number 6 at the top. I drew a picture of Ansel Ant with his 6 legs to match the number. Then, I glued a picture of 6 bumblebees, (counting) 1, 2, 3, 4, 5, 6."



NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Some students may benefit from continuing to work at the concrete level. Provide children with teddy bear counters, linking cubes, or similar materials so that they can arrange and count before drawing them on their number page. Then, comment, "Pia, I see you drew 6 teddy bears to match your counters."

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4. Ask students, "What can I add to my page to show 6?" Add suggestions, such as tracing 6 fingers or adding 6 stickers.
5. Tell students, "Now, let's make a giant 0 page together!" (Use chart paper.) Encourage students to think of different ways to show the number 0. The 0 page is likely to be relatively empty compared to other pages, but children might suggest a drawing like an empty bowl with 0 grapes inside. Take dictation to explain these types of drawings.

Part 2: Practice

Materials: (S) Per student: 6–8.5" x 11" pieces of colored construction paper with numbers 0, 6–10 written in the upper left-hand corner; per table: caddy with art supplies

Send students to tables to make their own books. Have supplies ready on each table. Start all students with the number 6.

1. As the students work, circulate and describe what they are doing, using parallel talk (e.g., "Andrew is drawing 6 cars on his paper to match the cars he plays with in our classroom," or "Ian is showing 6 on his paper strip with the green dot painters").
2. While circulating, ask how the number is shown. Consider recording the dictation on the page. For example, write, "I drew 3 eggs here and 3 eggs here. That's 6 eggs."
3. Since children work at different rates, write each child's name on the back of the page when they are finished, and set it aside. Give that student the next numeral page to continue working.

On the last day of work, help children put their pages in order (0 should go before 1) and fasten the book together in preparation for the Student Debrief.

Student Debrief (Duration to be determined)

Lesson Objective: Culminating task—represent numbers 6–10 using objects, images, and numerals in a number book.

Note: Begin the Student Debrief with a 4–5 minute Gallery Walk, inviting students and guests to read and enjoy the number books. Then, invite the children to bring their books to the circle for discussion.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

CENTER CONNECTION:

Consider creating a station for students to continue work on their number books during centers. This supports children who need significant amounts of uninterrupted time to complete their work and also encourages students to see more ways to represent their number, deepening their perspective and encouraging perseverance.

As students complete the Practice portion of the lesson, listen for evidence of student understanding that can be celebrated in the Debrief.

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Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

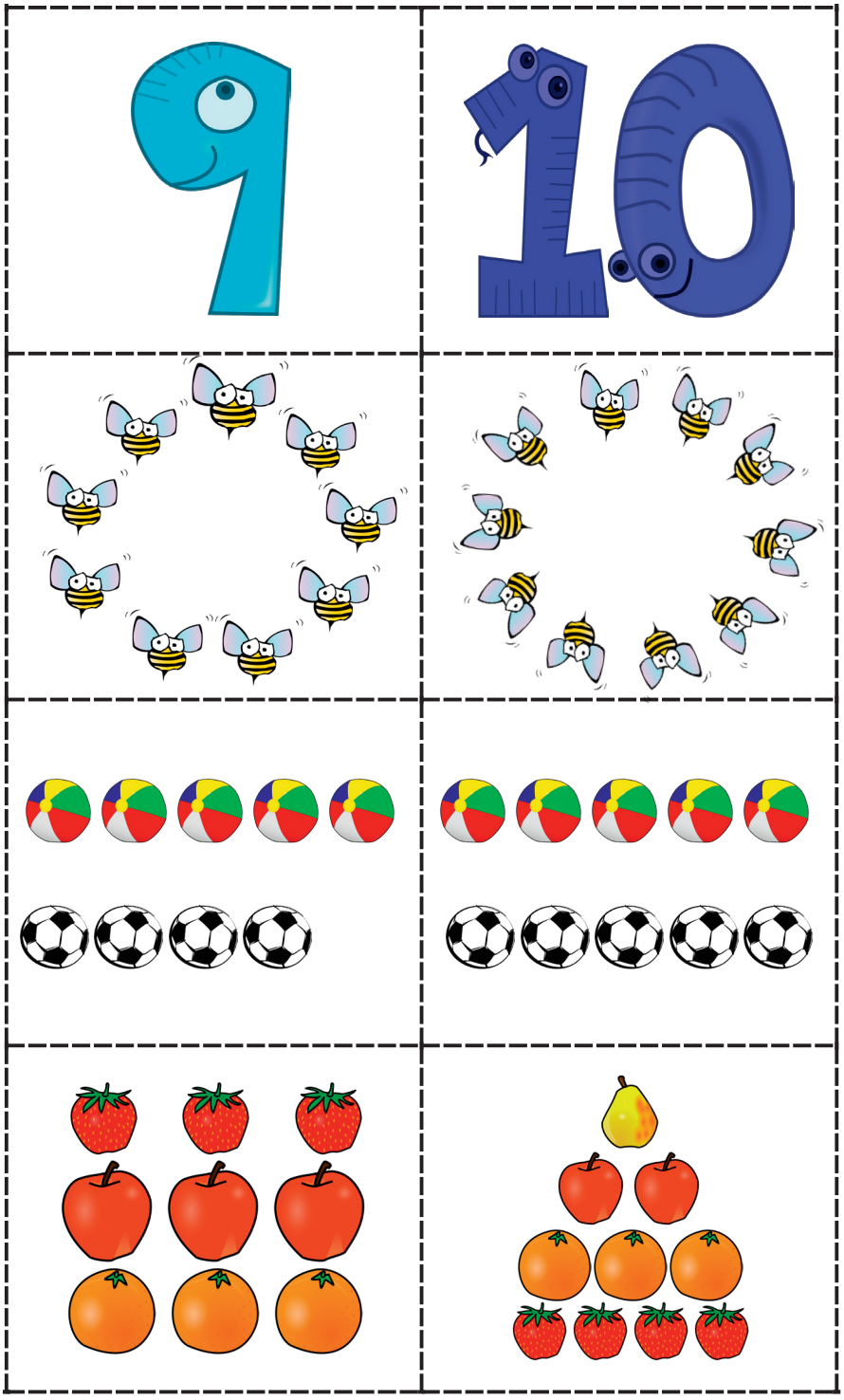
- Look at your book. Tell me what you used to show 10.
- Turn to the page that is your favorite. Share it with your partner. What did you use to show the number?
- Invite visiting community members to comment about the books.
- Who would like to share a number 6 page? (After student shares, invite students and community members to clap 6 times. Repeat with other number pages.)

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pictures and shapes

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Pre-Kindergarten End-of-Module 3 Assessment Instructions (Administer after Topic H)

Student Name _____

Topic E: *How Many* Questions with 0 up to 9 Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 9 small leaves, 9-stick of linking cubes with 5 yellow and 4 blue

	Date 1	Date 2	Date 3
Topic E			
Topic F			
Topic G			
Topic H			

1. (Put 8 small leaves in a straight horizontal line.) Touch and count the leaves.
2. Put one more leaf on the end of the line. How many are there?
3. (Exchange the leaves for a linking cube stick of 9 cubes with 5 yellow and 4 blue.) Count the cubes. How many are there?
4. (Break the stick into 3 threes. Arrange them as 3 rows.) Count the cubes. How many are there?
5. (Show an empty plate.) How many cubes are on this plate? Leaves? Elephants?

Note: If a child is unable to count 9 objects with one-to-one correspondence (one object paired with one number word), ask her to rote count to 9. Rote counting (**PK.CC.1**) is a precursor to counting with one-to-one correspondence (**PK.CC.3a**).

What did the student do?	What did the student say?
1. 2. 3.	

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Topic F: Matching One Numeral with 0 up to 9 Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 9 teddy bear counters of the same color and size, 10–12 leaves, paper plate, linking cube, numerals 0 to 9

1. (Arrange 9 teddy bears in a circle around the rim of a plate.) Touch and count the teddy bears. How many teddy bears are there? You may use the cube if it will help you count.
2. (Display the numerals 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 scattered and out of order on the table.) Hand me the number that shows the number of teddy bears on the plate.
3. (Remove all the teddy bears from the plate.) Hand me the number that shows how many cars are on this plate.
4. (Show a small pile of 10–12 leaves. Show the numeral 9.) Put this number of leaves in a straight line.

What did the student do?	What did the student say?
1. 2. 3. 4.	

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Topic G: *How Many* Questions with up to 10 Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 12 small leaves, 10-stick of linking cubes with 5 orange and 5 red

1. (Put 9 small leaves in a straight horizontal line.) Touch and count the leaves.
2. Put one more leaf on the end of the line. How many are there now?
3. (Exchange the leaves for a linking cube stick of 10 cubes with 5 orange and 5 red.) Count the cubes. How many are there?
4. (Break the stick into 2 fives. Arrange them as 2 rows.) Count the cubes. How many are there?
5. (Join the stick together again, and then break it into 5 twos in 5 rows.) Count the cubes. How many are there?

Note: If a child is unable to count 10 objects with one-to-one correspondence (one object paired with one number word), ask him to rote count to 10. Rote counting (**PK.CC.1**) is a precursor to counting with one-to-one correspondence (**PK.CC.3a**).

What did the student do?	What did the student say?
1.	
2.	
3.	
4.	
5.	

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Topic H: Matching One Numeral with up to 10 Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 10 small paper clips, piece of construction paper, 1 leaf, numerals 0 to 10, 12–15 beans

1. (Arrange 10 paper clips in a circle on the construction paper.) Touch and count the paper clips. How many paper clips are there? You may use the leaf if it will help you count.
2. (Display the numerals 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 scattered and out of order on the table.) Hand me the number that shows the number of paper clips on the plate.
3. (Exchange the paper clips on the paper for 12–15 beans in a scattered configuration. Show the numeral 10.) Put this number of beans in a straight line.

What did the student do?	What did the student say?
1. 2. 3. 4.	

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End-of-Module Assessment Task Standards Addressed	Topics E–H

Know number names and the count sequence.

PK.CC.1 Count to 20.[1]

Count to tell the number of objects.

PK.CC.3 Understand the relationship between numbers and quantities to 10; connect counting to cardinality.

a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

c. Understand that each successive number name refers to a quantity that is one larger.

PK.CC.4 Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects.

Evaluating Student Learning Outcomes

A Progression Toward Mastery is provided to describe and quantify steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency.* In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for each student is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the student CAN do now and what they need to work on next.

[1]PK.CC.1 is assessed directly if a child is not able to demonstrate mastery of PK.CC.3a, since rote counting is embedded in counting with one-to-one correspondence.

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A Progression Toward Mastery				
Assessment Task Item	**STEP 1 Little evidence of reasoning without a correct answer.** **(1 Point)**	**STEP 2 Evidence of some reasoning without a correct answer.** **(2 Points)**	**STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer.** **(3 Points)**	**STEP 4 Evidence of solid reasoning with a correct answer.** **(4 Points)**
Topic E **PK.CC.1 PK.CC.3abc PK.CC.4**	The student shows little evidence of understanding how to count objects in a configuration, does not understand cardinality, and is unable to count to 9 with one-to-one correspondence. The student does not understand that 1 more yields the next number or the concept of zero.	The student shows evidence of beginning to understand how to count objects in a line or array but has some difficulty understanding cardinality or one-to-one correspondence (says more than one number for each object or skips an object). The student does not understand that 1 more yields the next number or the concept of zero.	The student does two or three of the following: ▪ Arranges and counts cubes in linear and array configurations correctly to 9. ▪ Understands cardinality. ▪ Counts with one-to-one correspondence. ▪ Understands 8 and 1 more is 9. ▪ Recognizes when there are 0 objects.	The student correctly: ▪ Arranges and counts cubes in linear and array configurations correctly to 9. ▪ Understands cardinality (the last number said tells the number in a set). ▪ Counts with one-to-one correspondence (one object paired with one number word). ▪ Understands 8 and 1 more is 9. ▪ Recognizes when there are 0 objects.
Topic F **PK.CC.3abc PK.CC.4**	The student shows little evidence of understanding how to match a numeral to a quantity or is unable to make a group of a particular quantity. The student is unable to explain the process.	The student shows evidence of beginning to understand how to match a numeral to a quantity or how to create a group of a particular quantity.	The student demonstrates some understanding but inaccurately or inconsistently does the following: ▪ Counts up to 9 objects in a circular configuration. ▪ Matches the numerals 0 and 9 to the corresponding quantities. ▪ Creates a set of objects to match the numeral 9.	The student correctly: ▪ Counts up to 9 objects in a circular configuration. ▪ Matches the numerals 0 and 9 to the corresponding quantities. ▪ Creates a set of objects to match the numeral 9.

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A Progression Toward Mastery				
Topic G **PK.CC.1** **PK.CC.3abc** **PK.CC.4**	The student shows little evidence of understanding how to count objects in any configuration, does not understand cardinality, is unable to count from 1 to 8 with one-to-one correspondence, and does not understand that 1 more yields the next number.	The student shows evidence of beginning to understand how to count objects in a line or array but has some difficulty understanding cardinality or one-to-one correspondence (says more than one number for each object or skips an object). The student does not understand that 1 more yields the next number.	The student does two of the following: ▪ Arranges and counts cubes in linear and array configurations correctly to 10. ▪ Understands cardinality. ▪ Counts with one-to-one correspondence. ▪ Understands 9 and 1 more is 10.	The student correctly: ▪ Arranges and counts cubes in linear and array configurations correctly to 10. ▪ Understands cardinality (the last number said tells the number in a set). ▪ Counts with one-to-one correspondence (one object paired with one number word). ▪ Understands 9 and 1 more is 10.
Topic H **PK.CC.3ab** **PK.CC.4**	The student shows little evidence of understanding how to match a numeral to a quantity or is unable to make a group of a particular quantity. The student is unable to explain the process.	The student shows evidence of beginning to understand how to match a numeral to a quantity or how to create a group of a particular quantity.	The student demonstrates some understanding but inaccurately or inconsistently does the following: ▪ Counts up to 10 objects in a circular configuration. ▪ Matches the numeral 10 to the corresponding quantity. ▪ Creates a set of objects to match the numeral 10.	The student correctly: ▪ Counts up to 10 objects in a circular configuration. ▪ Matches the numeral 10 to the corresponding quantity. ▪ Creates a set of objects to match the numeral 10.

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Class Record Sheet of Rubric Scores: End-of-Module 3 Assessment					
Student Names	Topic E: *How Many* Questions with 0 up to 9 Objects	Topic F: Matching One Numeral with 0 up to 9 Objects	Topic G: *How Many* Questions with up to 10 Objects	Topic H: Matching One Numeral with up to 10 Objects	Next Steps:

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